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ABSTRACT

This document details a PPB system developed in an ESEA Title III project, Intermediate Unit Planning Study, for use in Pennsylvania (see EA 002 750). This manual version can be manually calculated with a desk calculator. Reported in this document, for use by school districts, are background information, major elements of this PPB system, and the specific procedures to be followed in its implementation. This procedures manual includes a suggested work schedule and samples of forms, worksheets, and reports. Appendixes contain school district data and information file requirements, a general method of estimating future school enrollments, a survey of secondary school course offerings in 1968-69, and a methodology of revenue forecasting in education. The procedures manual that includes this information for intermediate units is EA 002 751. Other related documents are EA 002 752 and EA 002 754. (DE)

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EDUCATION-PLANNING-PROGRAMMING-BUDGETING SYSTEM
PROCEDURES MANUAL FOR SCHOOL DISTRICTS VERSION I, MODEL 2

VOLUME I

March, 1969

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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FOREWORD

Two distinct types of Planning-Programming-Budgeting System (PPBS) have been developed in the Intermediate Unit Planning Study for use by intermediate units and school districts in the Commonwealth of Pennsylvania. The first type is detailed in this document and is referred to as the manual version, i.e., the Planning-Programming-Budgeting Procedure contained herein can be completely calculated manually with the use of a calculator. The second type is referred to as a semi-automated version, i.e., a version dependent for its calculation on the use of electronic data processing equipment.

The manual version passed through one revision following its introduction into the field last fall. The first manual version (PPBS - Version I, Model 1) was tested with Bucks and McKean County Offices and Cameron County, Central Bucks, Morrisville, Pennsbury, Port Allegany, and Smethport Area School Districts from November 1968 through February 1969. The revision of this version is contained in this document and is referred to as PPBS - Version I, Model 2. No further development of the manual version is contemplated in the study.

The semi-automated versions are of two types - batch-processing and on-line. The batch-processed version is known as PPBS - Version II, Model 1. The on-line version is known as PPBS - Version III, Model 1. The school district's batch-processed version was tested from December 1968 through February 1969. The intermediate unit's batch-processed version will be completed and tested by the middle of April 1969. The documentation for the batch-processed versions for school districts and intermediate units should be available in May 1969. Design of the on-line-version will continue into December 1969. Initial testing of this version should be completed by March 1970. A technical report on the development and testing of the on-line version will be completed by the end of May 1970.

An improved PPBS - Version II Model 1 will be developed in August and early September 1969 and will be known as PPBS - Version II, Model 2. This version will incorporate the best features of Version I, Model 2 and Version II, Model 1 and will include several analytical decision aids. This final batch process version will be tested by the pilot county offices and school districts during the 1969-70 school year.

The manual version is an excellent training device and, of course, can be used by intermediate units and school districts in Pennsylvania that do not have access to or do not wish to use electronic data processing equipment. However, once a staff has received training in the use of the Planning-Programming-Budgeting System we strongly recommend that the batch process-version be used for all calculations. This system will save upwards of two man weeks of computational effort.

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SECTION I

BACKGROUND INFORMATION ON PLANNING-PROGRAMMING-BUDGETING

What is the Planning-Programming-Budgeting Process?

Planning-Programming-Budgeting (PPB) is the general term applied to a set of interrelated management planning activities. Education-Planning-Programming-Budgeting (EPPB) is the more specific term used when the area of management is education, and the management unit is a school district or intermediate unit.

The essence of this relationship is the systematic development and presentation of information as to the full implications, costs and benefits of major alternative courses of action relevant to major resource allocation decisions. Specifying this relationship permits any organization to better allocate resources among alternative methods of attaining its objectives, recognizing limiting conditions.

If we examine these events and their relationships we find that they can be applied to both private and public organizations. However, as we probe deeper into each event and its relationship to other events we find that a Planning-

Programming-Budgeting System (PPBS) changes subtly in character from organization to organization. That is, some PPB events are universal and connected in largely the same sequences, independent of the organization in which they are applied. Specific items, on the other hand, are processed through a PPB System (PPBS) by specific techniques peculiar to the nature of the organization in which the PPBS is being implemented.

For example, consider the use of a PPBS for a municipal government which has no schools under its jurisdiction. The event of forecasting, common to any PPB system would still occur; however, the items forecast by the city would more than likely not include school enrollment by grade. Instead items forecast would be more relevant to the city's operation. In addition, a technique used for forecasting school enrollments might not be satisfactory for forecasting the items in which the city is interested. This example helps to stress the point that a particular PPB System must be consciously designed and adjusted to satisfy specific operating requirements of the organization for which it is being developed. There is no universal set of specific techniques that can be used for all organizations.

Therefore, except at a general level, PPB means different things to different organizations. The PPBS that is designed for one organization will not necessarily, indeed, probably won't work for another. This does not mean, of course, that the efforts on behalf of other organizations have not been examined by the study staff; they have, and they will continue to be examined for useful ideas. The PPBS under design in this Study is one that is directed toward public education organizations and consists of two large sub-systems, one for the local school district and one for the intermediate unit or county superintendent of schools office. Thus the designation EPPBS (Education-Planning-Programming-Budgeting System).

When PPB is discussed at a general level people tend to form the impression that PPB represents nothing very different from their current way of doing things. It is often pictured as being very vague in outline with little new in substance or method to recommend it over current practice. A parallel between PPB and current practice can be found in the difference often noted between science and common sense. Science differs from common sense in at least four ways:

1. Science systematically builds theoretical structures. Common sense often accepts convenient explanations of phenomena.
2. Science systematically and empirically tests its theories. Common sense often is employed to test hypotheses but does so in a loose and selective fashion.
3. Science tries systematically to rule out "causes" other than those hypothesized to be the cause. Common sense seldom bothers to control its explanations in a systematic manner.

4. Science consciously and systematically pursues relationships. Common sense often seizes on the accidental occurrence of two events and links them as cause and effect.

Although PPB does not provide a management "science", it is a "systematic" framework within which management can operate. It represents a conscious effort to increase rationality in decision making. Although it faces the same limits as those practices which are based on common sense, that is, uncertainty of future conditions, inadequate measuring instruments, and a variety of alternative explanations for events, PPB does aid in exposing and reducing these limits. PPB can contribute to the development of a more adequate means of measuring progress and to discovery of casual relationships.

What Terms Are Frequently Used in the Education-Planning-Programming-Budgeting System?

To provide a common orientation in understanding the EPPB System you need a working knowledge of a few frequently used terms. Other terms less frequently used are defined in the Glossary. Terms will be added to the Glossary from time to time.

Output

This term is used to describe the measurable results of the work accomplished in a program or project. There may be more than one output which results from a single program or project. An elementary education corrective reading project has an output which can be described in terms of number of children successfully completing the corrective reading project. A pupil transportation program has an output which may be described as the number of pupils transported to and from school. An output, in the strictest interpretation of the term, simply identifies a quantity of end results from a program or project.

Performance Measure

A performance measure is used to relate outputs to other criteria of quality, efficiency, or effectiveness. An elementary program or project may have a variety of performance measures. These may include cost per pupil, where output is related to money; average reading achievement, where output is related to a quality standard; or, percentage of pupils of secondary school age completing secondary school, where output is related to a demand to provide a measure of effectiveness. Similarly, in a student transportation program the cost per pupil of transportation is a performance measure.

Indicator

An indicator, especially as it is used in this educational PPBS, is a measure of quantifiable factors which allows an experienced administrator to estimate the overall results of a number of programs and projects. The word indicator is a much less precise term than either output or performance measure. In some cases, a particular output or a particular performance measure may in fact be used as an indicator of overall organization or system functioning. Thus the percentage of elementary school children attaining a particular level on a particular achievement test may be a performance measure for a particular program and may also be used by the chief school administrator as an indicator of the results of the interactions of many different programs and projects.

Objective

The specification and definition of objectives will follow a hierarchial organization from (1) school-district-wide or primary objectives, through (2) program-project or secondary objectives, to (3) activity or tertiary objectives. Primary objectives are influenced by the interaction of many programs and projects. Secondary objectives are influenced by the interactions of many activities within a given program or project. Tertiary objectives are influenced by the interactions of several tasks within a given activity.

An objective is not a measure of present or past performance or output, nor is it the kind of measure which is used as an indicator. An objective is oriented to the future. An objective specifies the accomplishment or the prevention of some specific situation in the future. An objective may refer to changes to be obtained in performance measures, or changes to be obtained in outputs, or changes to be obtained in indicators at some specific time in the future. In addition, an objective may deal with changes to be brought about which are not represented by indicators, outputs, or performance measures. Thus, an objective for an elementary program may be to have all children attain a specified minimum score on a particular achievement test by the end of the current school year. Another objective for the same elementary program might be to reduce the per pupil cost from $500 per pupil to $450 per pupil. An objective therefore specifies measurable results to be achieved in a specified time period. An objective does not describe how the results are to be achieved. The way in which a specific result is to be achieved is a program or project or, perhaps, one activity within a specific program or project.

Constraint

One can recognize three kinds of constraints on the operation of an educational unit: (1) decisions about programs made by the decision-making group; (2) those imposed by the environment, viz., the community, state, and national, as input to the system, such as, the number of students who must be enrolled or the revenues available; and (3) those imposed by the environment but not resulting as inputs, such as, legal requirements, and non-program regulations imposed by the top decision-making group.

Decision-Making Group

This is the group of individuals responsible for determining policies, plans, programs, and budgets for the educational unit.

Program and Subprogram

An identified set of continuing activities (1) which are sufficiently routine and accepted to be carried on unless there is a specific decision by the board or superintendent to discontinue them, (2) which some specific segment of the present school organization has responsibility for undertaking, (3) which have a specific relationship to more than one objective, and (4) which for this reason are divisible into sub-programs.

Project

An identified set of new activities (1) which are non-routine, less familiar, and not continuing, (2) which have a specific beginning and closing date, (3) which are outside the formal organizational structure, (4) which generally relate to a single explicit objective, (5) which normally relate to change and innovation, (6) for which performance involves high risk to the organization, or (7) which are not normally divisible into sub-projects. (For a more detailed explanation of the distinction between programs and projects see Appendix A, particularly the paragraphs on "Program Approach", "Project Approach", and "A Mixed Approach.")

Activity

An identified set of tasks which: (1) are either continuous (program) or non-continuous (project); (2) are incorporated along with other activities into a specific program or project; and (3) have specific relationships to one or more explicit tertiary objectives.

Program and Project Set

In the EPPB any change in a single program or a group of programs is considered to be a project except for simple changes in the desired staff/student ratios. Program changes, with the exception of ratios, are considered to be projects so as to insure accurate reporting of costs and careful estimates of anticipated effects of the change. Projects can be either operational or capital improvements, as will be explained later.

Thus, a program and project set is a combination of programs (perhaps with changed staff/student ratios) and projects. A set may increase or decrease existing programs (from the levels forecasted in the Final Base Case) and introduce new operational or capital improvement projects, beyond those in the Base Case, at any point in the five year planning period. (See Appendix A.)

Base Cases

Three separate base cases are developed in the first half of the EPPBS Procedure - Base Case, Adjusted Base Case and Final Base Case. The basic underlying assumption of all the base cases is that the objectives and constraints that were taken into consideration during the development and deliberation process leading up to the final approval of the present five-year plan and current budget will not change over the next five years. An example of the implication of this assumption is that the current year's pupil-teacher ratios will remain the same for the next five years, unless a specific project is adopted that is designed to alter this ratio.

The purpose of the calculations for the Base Case are to show only the effects of inflation upon expenditures over the five-year planning horizon. Increases or decreases in pupil enrollment and capital improvement costs are ignored in these projections.

Calculations for the Adjusted Base Case show the combined effects of inflation and changes in pupil enrollment on the expenditure pattern over the next five years. The calculations for the Adjusted Base Case lead to the calculations of the Final Base Case. The Final Base Case shows the effects of inflation, changes in pupil enrollment, and increased costs resulting from capital improvements.

If a five-year plan was developed last year, the plan would be updated in the first half of the PPBS Procedure and the results of this updating would be called the Final Base Case. Therefore, the calculations related to the Base Case and Adjusted Base Case would be eliminated. However, if a five-year plan was not developed last year, then it will be necessary to perform the calculations for each base case.

What Are the Major Characteristics of a Planning-Programming-Budgeting System?

A PPBS provides a framework for relating the activities of management in a systematic way that will help to clarify objectives and make improved allocation decisions. The PPBS approach has several distinctive characteristics.

Objectives and Programs

PPBS focuses on identifying the objectives of the organization and determining ways of measuring or estimating progress toward these objectives. All programs, projects and activities of the organization, regardless of their placement in the organization, are then related to these objectives. A set of activities which contributes toward the achievement of an objective or set of objectives is designated a project or program. Objectives and programs may be thought of as hierarchies proceeding from the most general to the most specific. The degree to which these hierarchies are defined depends mainly on the size of the organization. Large organizations require much more detailed specification at the objectives and program level than small organizations.

Future Implications

The PPBS approach explicitly considers the implications of future conditions. This requires forecasts of future demands on the organization, future resources available, and the capability of current programs and projects to meet the objectives of the organization under the conditions anticipated in the future. Plans are revised or new plans originated as necessary to overcome foreseeable obstacles and to achieve changing objectives.

Multi-Year Plans and Financial Plans

Programming is an essential part of the PPBS approach. Long range plans are broken down into specific groups of activities (programs or projects) to be accomplished in each of the next five years. Both capital and operating costs are shown in each year for each program. The five-year plan includes the financial plans for providing revenues and other resources needed to accomplish the activities included in the five-year plan. The first year of the five-year plan and financial plan becomes the basis for the detailed budget which implements the first year of the five-year plan.

Analysis of Project Alternatives

The PPBS approach provides the framework for analyzing the relative merits of alternative projects for achieving specified objectives. First setting out measurable objectives, the manager and his staff are then able to assess the degree to which different alternative projects would meet these objectives. By estimating the total costs of each course of action in comparison with the results that would be achieved by each course of action, the manager is aided in choosing the alternative to implement, with increased understanding of the effects of his action not only in the present but over the five years of the multi-year plan.

Annual Revision

The process of planning, programming, and budgeting is repeated annually in the PPBS so that planned action is regularly revised in view of actual experience in carrying out the first year of the multi-year plan. Thus the PPBS approach provides a systematic way of helping the organization keep its plans and actions up to date.

It should be noted that the PPBS approach is not a "total management system". PPBS does not deal with problems of budget implementation, efficiency of operating units, manpower selection, cost control, monitoring and control of operations, cost accounting, or performance measurement and reporting. Functions such as these are complimentary to the PPBS approach but are not directly a part of it.

What are the Major Elements of an Education-Planning-Programming-Budgeting System For the Intermediate Unit?

Now that we have identified the major characteristics of a PPB System, we can now examine the specific elements that are involved in the creation of an EPPBS for the intermediate unit or county office.

Input Forecasts

Given current laws and policies under which an intermediate unit or county office are operating, several input forecasts are critical. Forecasts of expected student enrollment, by grade for school districts and by special education program for the intermediate unit, and of expected revenue by major source affect each EPPB Cycle. These forecasts of pupil and revenue inputs must be made for each year of the five-year planning horizon. While all school districts make some formal or informal projections at present, the interaction of the local school district's PPBS with the intermediate unit's PPBS makes it important to have regular, comparable forecasts covering the same factors for the same five-year period for each school district within the area served by the intermediate unit.

Standard forecasting methods for school district enrollment and revenues are provided as a part of this manual. The methods include statistical procedures and judgmental estimates by school administrators in arriving at reasonable forecasts. An example of judgments would be estimates of special revenues contingent on state or federal funding of a proposed project. Methods of a less precise nature for forecasting intermediate unit special education program enrollments and revenues are also provided.

Program Structure

The grouping of activities into broad program categories is of considerable importance in systematic planning and programming. The general program structure developed as part of this manual takes into account common activities of school districts and intermediate units as well as allowing for differing activities among school districts and intermediate units. The EPPBS program structure does not attempt to duplicate the organizational structure or accounting and budgeting classifications, but is especially related to the purposes of the school district and intermediate units and the activities which are conducted in achieving these purposes. See Appendix A for detailed information. The activities are grouped according to the following plan: Program Area, Program, Subprogram, and Activity. Activities are not shown in Appendix A; however, the classification scheme permits sub-dividing to this level if desired.

In addition to the twenty-three continuous programs shown in Appendix A, an indeterminate number of non-continuous projects may form a five-year plan. In the development of a five-year plan the goal is to find that collection of economically feasible projects which when added to the twenty-three programs will have the best chance of achieving a predetermined set of objectives within specified constraints. Because projects are the product of the intermediate unit staff's desire to respond to a particular problem, no effort has been made to develop a detailed project classification system. However, projects are grouped for ease of handling into two general categories - Operations and Capital Improvement.

Indicators

One of the most difficult tasks in designing a EPPB System is the task of providing measures of effectiveness for specific objectives. Theoretically, the ideal would be to find a single measure of the output of the system and to relate all activities to that final measure of effectiveness. In the case of education and other complex public services, there is reason to question the validity of the theoretical ideal, and as a practical matter, there is no known way to produce a single, valid measure of educational output. Under these circumstances, a better approach is to identify indicators of major variables subject to partial if not complete control of the intermediate unit which, when interpreted by experienced administrators and policy officials, indicate possible needed action. Examples of such indicators now in use by school administrators include variations of pupil-teacher ratio and grade achievement scores.

The indicators shown in this document have been selected to show how indicators serve as general reference points for estimating the present and future implications of present programs and projects or planned projects. Indicators are also of value in terms of setting objectives, by allowing intermediate unit staffs and boards to designate desirable levels which they wish to achieve for each indicator. It is highly likely that intermediate unit staffs and boards will also set more specific objectives for each important program, project or activity to facilitate their evaluation of alternative courses of action.

Operational Forecasts

Forecasting the financial and operational (staffing, facilities, equipment, etc.) implications of continuing programs and projects and planned projects is an essential part of the EPPBS approach. Operational forecasts provide a means of testing the practicality of tentative decisions, and allow estimates to be made of the effect on indicators of plans, in the light of input forecasts of probable enrollments and revenues. As in the case of input forecasting methods, operational forecasting methods being developed as part of this manual include both judgmental estimates by school administrators and statistical procedures.

Multi-Year Plans, Programs and Projects

Five-year plans, which set out policy guidelines in the form of objectives and desired indicator levels and the methods of reaching these levels within recognized constraints, provide the overall picture of where the intermediate unit expects to be in the future and how it intends to get there. These plans include all major programs and projects, and take into account input forecasts, operational forecasts and estimates of indicator levels. Because these plans represent major policy decisions, they do not include details of operations or finances, but focus on major results to be achieved and on major program and project changes, including changes in capital facilities as well as operations.

Multi-year programs and projects outline the means of implementing the five-year plan. Multi-year programs and projects show the broad allocation of resources among major programs and projects in each of the five years or the plan, and identify results to be achieved in each year. Action to be taken in each year is also outlined for each major program and project, so that the five-year plan shows a financially and operationally feasible series of steps needed to carry out the plans. Relationships between capital facilities and operations, such as, staffing and maintenance requirements for new facilities, are made clear in the five-year plan, as are changes in fixed costs, such as, debt service. The first year of the five-year plan becomes the basis for preparation of the annual budget, which can be prepared with confidence that budgeted activities will contribute to accomplishment of policy guidelines, and will be compatible with the steps to be taken in following years.

Budgets

The annual budget accomplishes implementation of the first year of the five-year plan. The approved budget provides specific authority to take action and expend resources, while the five-year plan represents policy guidelines and does not give specific authorization. The format of the annual budget is not of direct importance to the EPPB System. The annual budget may be a line item budget or a program budget, so long as there is a way of relating the first year of the five-year plan to the particular type of budget in use. Therefore, it is not intended to develop a special budget format as part of the study.

What is the Education-Planning-Programming-Budgeting Procedure?

Each employee contributes something to the EPPB Procedure during the course of his year round activities. However, the concentrated effort of planning, programming and budgeting extends from September through March. These seven months are packed with activity and require conscientious effort to maintain a satisfactory schedule of progress. The five intervening months contribute to the EPPB Procedure as a period for gathering data that can be processed by the EPPB System. The cycle of events for the annual EPPB Procedure is shown in Figure 1. A more detailed explanation can be found in the report of the PPBS design.(1)

The procedures to the left of the diagonal line are the planning, programming and budgeting steps. Those in the lower right are the general processes carried out on a day-to-day basis to control and guide the on-going operations. It is assumed that these processes will produce data which is recorded in a data base. This data base consists of a collection of files, each of which contains information about some aspect of the intermediate unit, viz., personnel, facilities, pupils, programs, etc.

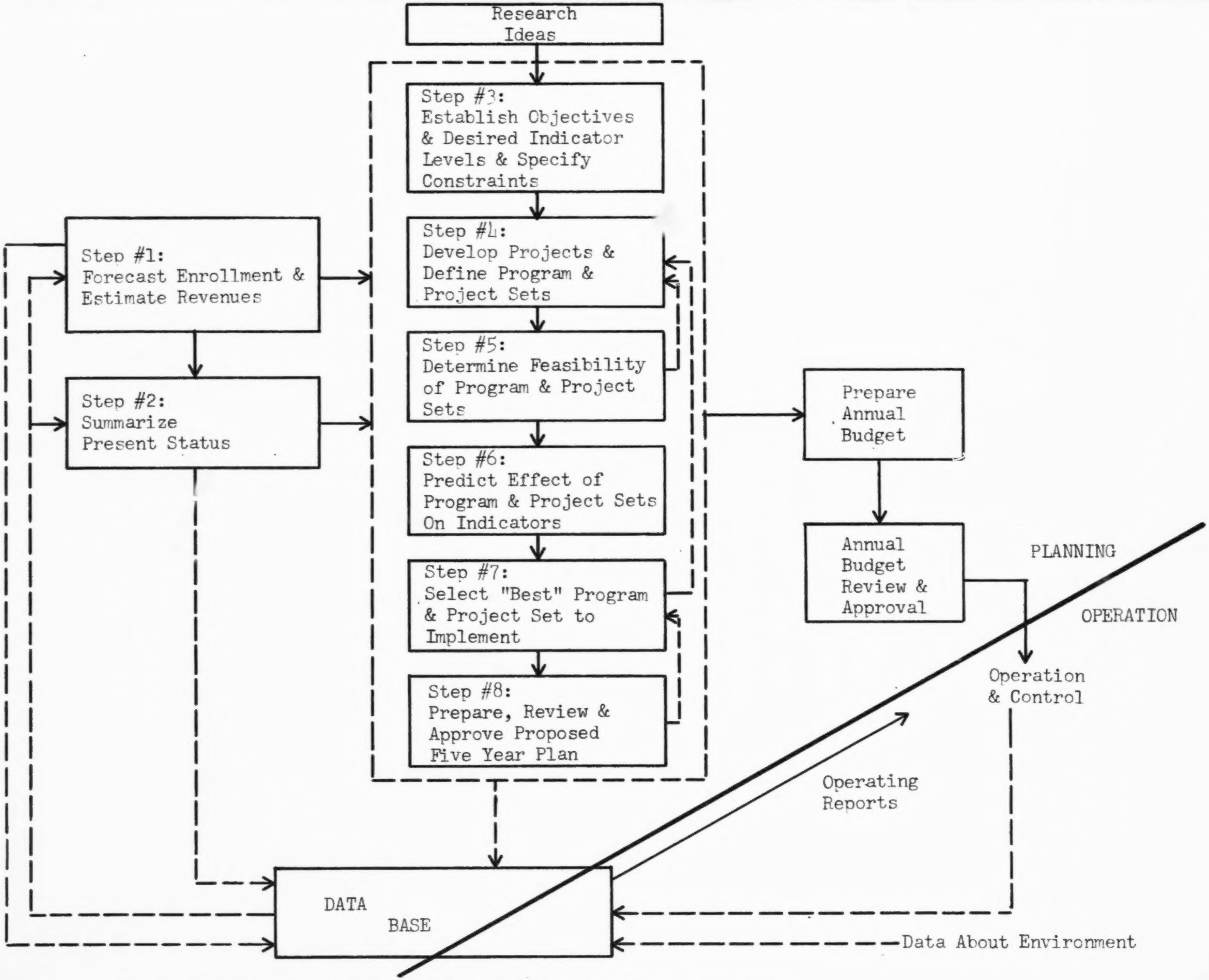

Research Ideas
Step #1: Forecast Enrollment & Estimate Revenues
Step #2: Summarize Present Status
Step #3: Establish Objectives & Desired Indicator Levels & Specify Constraints
Step #4: Develop Projects & Define Program & Project Sets
Step #5: Determine Feasibility of Program & Project Sets
Step #6: Predict Effect of Program & Project Sets On Indicators
Step #7: Select "Best" Program & Project Set to Implement
Step #8: Prepare, Review & Approve Proposed Five Year Plan
Prepare Annual Budget
Annual Budget Review & Approval
PLANNING
OPERATION
Operation & Control
Operating Reports
DATA BASE
Data About Environment

Fig. 1. Planning Programming Budgeting Procedure in summary form.

Step #1

The EPPB Procedure starts with data gathering and computational efforts designed to describe the environment in which the intermediate unit will operate over the next five years. Several aspects of the environment will be characterized, i.e., potential revenues and future enrollments by grade in the school districts and special education programs of the intermediate unit. These forecasts provide estimates of factors important to the future activities of the intermediate unit and, therefore, are indispensable to this decisioning process. These forecasts are entered into the data base for use in the subsequent planning effort.

Step #2

The second step extracts data from the data base and summarizes it in a form suitable for the subsequent planning steps. One output of this procedure will be estimates of the actual level of indicators and other descriptions of the present status of the intermediate unit projected over a five-year planning horizon. Another output will be the identification of problems, both those which have arisen during the school year and those which are indicated by large gaps between desired and actual levels of indicators. The data resulting from this step are recorded in the data base.

The main part of the planning and programming effort is a series of six additional steps which are designed to produce a specific five-year plan. This plan consists of the five-year objectives and desired indicator levels, accompanied by the set of programs and projects which are to be undertaken during the five-year period. The data resulting from these six steps (described below as Steps #3 to #8) are recorded in the data base.

Step #3

The third step, carried out by the highest decision-making group, is to establish policy guidelines consisting of specific objectives, desired indicator levels, and specified constraints for the intermediate unit over the five-year planning period.

Step #4

The fourth step is concerned with defining potential projects. Consideration of these projects is based on the policy guidelines, environmental forecasts, problems and the status of the intermediate unit. Projects are proposed which should improve the operation of the intermediate unit and eliminate or reduce the problem areas. These projects are then grouped with the twenty-three continuing programs to form program and project sets. Thus, several different sets of programs and projects can be identified and critically examined.

Step #5

The fifth step determines the feasibility of these various program and project sets. Feasibility is determined in terms of financial resources and manpower resources. A program and project set is appraised by use of appropriate cost factors, including various estimates of inflation, and the enrollment and revenue forecasts. A feasible program and project set is a set that can be financed within revenue and manpower constraints. One result of this step might be the initiation of projects to increase revenues, recruit personnel, or reduce costs in certain programs. Steps #4 and #5 may have to be repeated several times before several feasible program and project sets are selected.

Step #6

The sixth step involves an effort to predict how the feasible program and project sets will perform over the five-year period. In particular, estimates are made of indicator levels for each of the five years for each program and project set.

Step #7

The seventh step is concerned with the output of the prediction task which permits a comparison between the objectives and desired indicator levels established earlier and the suitability of a particular set of programs and projects. The superintendent can then judge the alternative program and project sets and select the one that most nearly satisfies the policy guidelines. Since none of the proposed program and project sets may be feasible, or none may produce the desired results, Steps #4 through #7 may have to be repeated several times before an adequate set of programs and projects is selected.

Step #8

The eighth step involves the preparation, review and acceptance of the five-year plan and program by the highest decision-making group. This event may require recycling back through Step #7 and possibly back to Step #4 before the highest decision-making group approves the five-year plan.

Budget Preparation, Review, and Approval

Once the five-year plan is developed, reviewed and approved the annual budget is prepared. The first year of the five-year plan is then specified in detail and budgets and operating guidelines for the intermediate unit are developed. The budget is then prepared for the appropriate review, approval and implementation.

SECTION II

EDUCATION-PLANNING-PROGRAMMING-BUDGETING SYSTEM PROCEDURE FOR SCHOOL DISTRICTS

The Annual Cycle

The flow chart below, entitled "Educational Planning-Programming-Budgeting System for School Districts - Version I, Model 2 - Revised Manual System", provides an overview of the annual EPPBS Procedure. This chart shows the flow of data into and out of the predefined processes in the system and the sequence for completing the various processes. Seven milestones are shown in boxes at the bottom of the chart. These milestones represent key events - the accomplishment of which are essential to the completion of the EPPBS Cycle.

Milestone #1

A forecast analysis is completed to establish where errors, if any, occurred in the past school year's enrollment and revenue forecasts. This forecast analysis should include review of the underlying assumptions and conditions used in each forecast, and modification of those assumptions not consistent with experience over the past year.

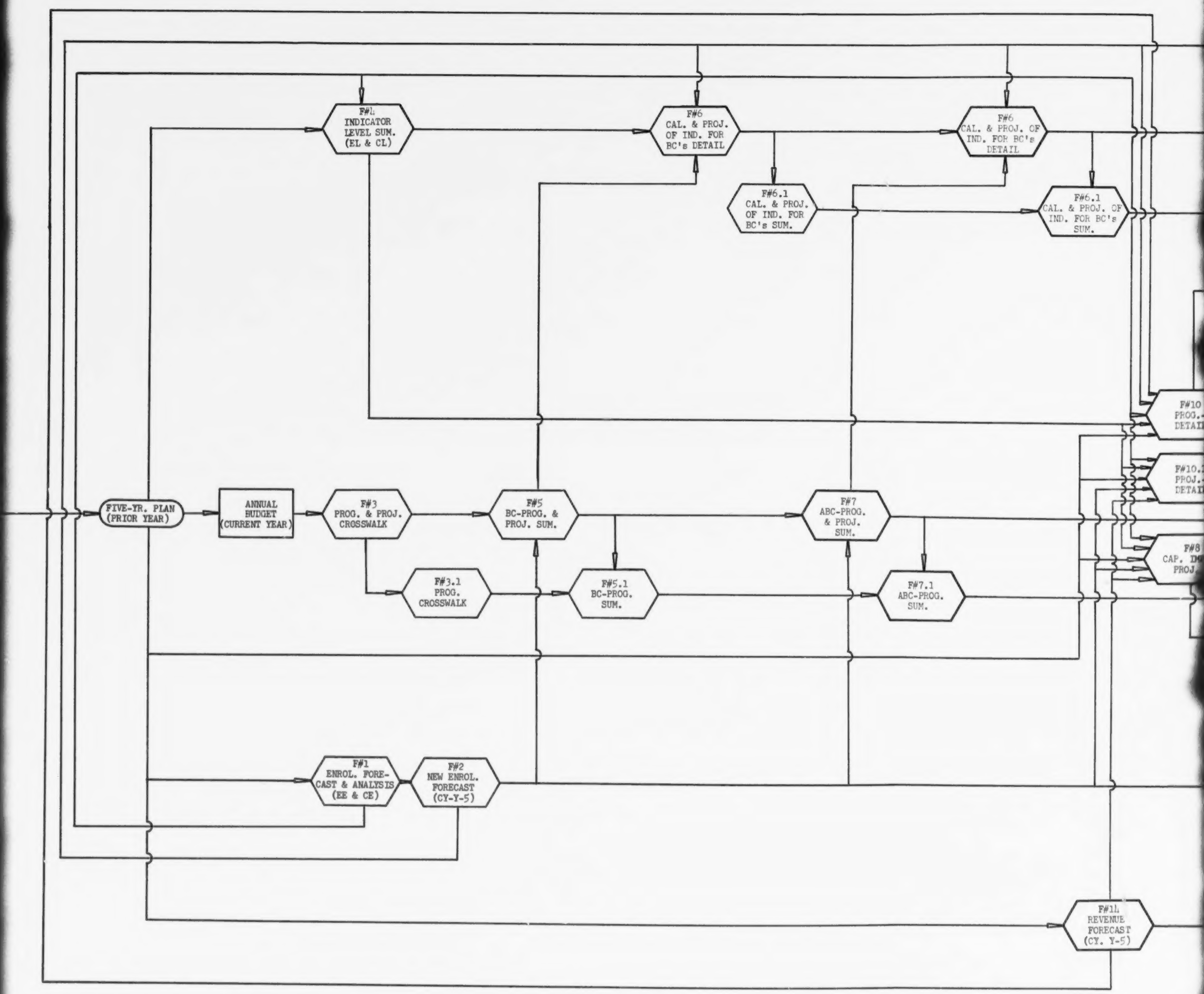
A program and project analysis of the current year's program and project effort also is made. This analysis includes (1) information on the extent to which the programs and projects have become operational, (2) discussion on the effect of policy changes on program and project implementation, (3) comments on program and project problems and ideas resulting from the analysis, and (4) recommended actions. The analysis is reviewed by the superintendent.

New projections of input variables are made using the forecast analysis. This new forecast is used as the basis for recomputing the base cases for both capital and operating expenses for the current year plus five additional years. The cost estimates of implementing the current five-year plan for the current year and the succeeding five years is revised. Using the base expenditure estimates, the probable indicator levels and the manpower feasibility associated with the recomputed base cases are re-estimated. New revenue estimates are established and the recomputed Final Base Case expenditures summarized for the school district as a whole.

Forms #1 through #15 must be completed before Milestone #1 can be achieved.

The basic assumption underlying the base cases, as stated previously, is that the objectives and constraints utilized in the development of the present five-year plan and current budget remain in effect for the current year and the next five years. The definition of base cases should be reviewed for the assumptions upon which the expenditure calculations for these cases are made.

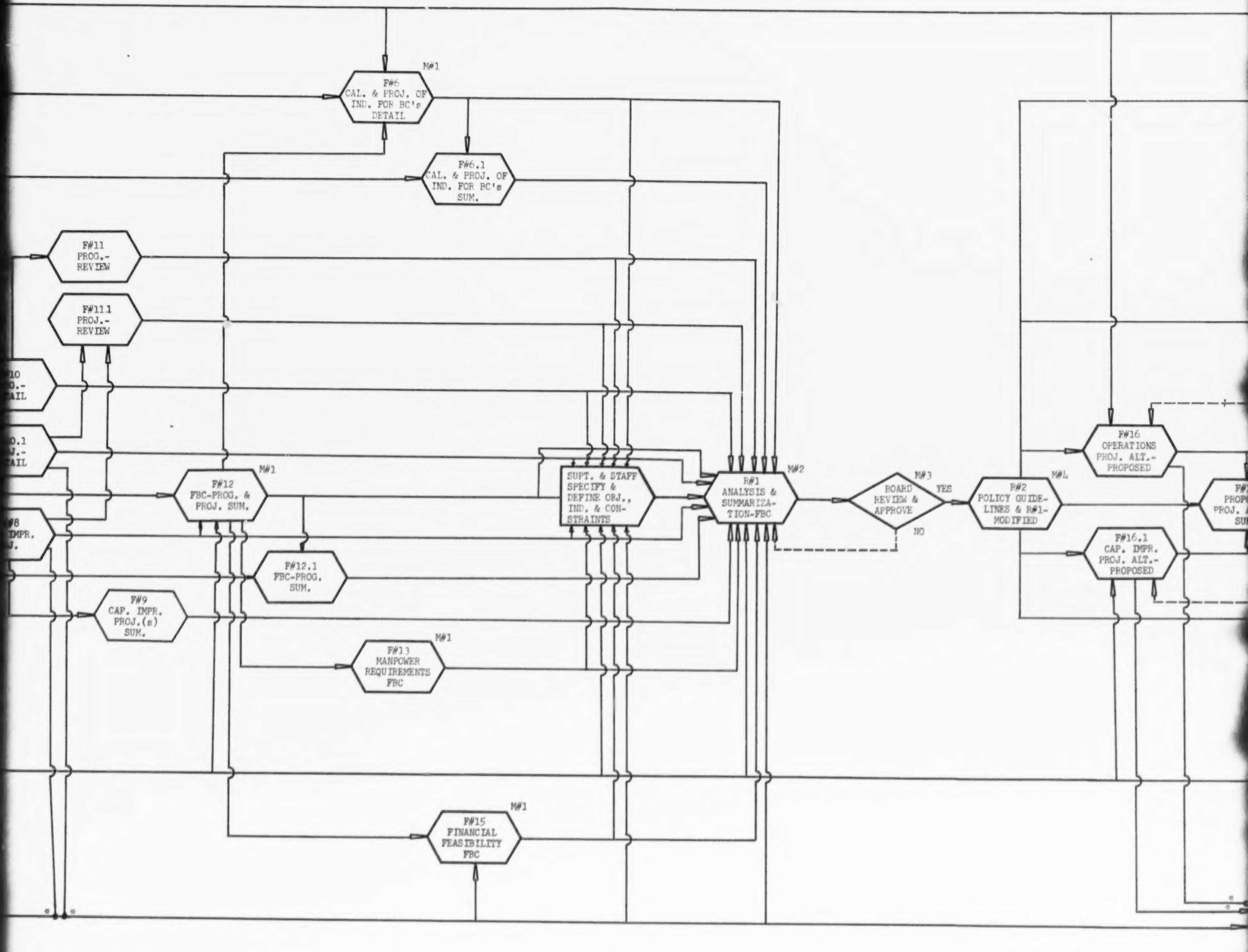
EDUCATIONA


F#4
INDICATOR
LEVEL SUM.
(EL & CL)
F#6
CAL. & PROJ.
OF IND. FOR
BC's DETAIL
F#6
CAL. & PROJ. OF
IND. FOR BC's
DETAIL
F#6.1
CAL. & PROJ.
OF IND. FOR
BC's SUM.
F#6.1
CAL. & PROJ. OF
IND. FOR BC's
SUM.
F#10
PROG.-
DETAI
F#10.1
PROJ.-
DETAI
FIVE-YR. PLAN
(PRIOR YEAR)
ANNUAL
BUDGET
(CURRENT YEAR)
F#3
PROG. & PROJ.
CROSSWALK
F#5
BC-PROG. &
PROJ. SUM.
F#7
ABC-PROG.
& PROJ.
SUM.
F#8
CAP. IM
PROJ.
F#3.1
PROG.
CROSSWALK
F#5.1
BC-PROG.
SUM.
F#7.1
ABC-PROG.
SUM.
F#1
ENROL. FORE-
CAST & ANALYSIS
(EE & CE)
F#2
NEW ENROL.
FORECAST
(CY-Y-5)
F#11
REVENUE
FORECAST
(CY. Y-5)

AL PLANNING - PROGRAMMING - BUDGETING SY

VERSION I, MODEL 2, REVISED MANU

PREDEFINED PROCESSES ARE SHOWN AND THEIR RELATIONSHIPS TO THE DEVELOPME
-DATA INPUTS OTHER THAN THOSE SHOWN ARE OUTLINED IN T


M#1
F#6
CAL. & PROJ. OF IND. FOR BC's DETAIL
F#6.1
CAL. & PROJ. OF IND. FOR BC's SUM.
F#11
PROG.-REVIEW
F#111
PROJ.-REVIEW
10
G.-
AIL
0.1
J.-
AIL
8
IMPR.
J.
M#1
F#12
FBC-PROG. & PROJ. SUM.
F#12.1
FBC-PROG. SUM.
F#9
CAP. IMPR. PROJ.(s) SUM.
M#1
F#13
MANPOWER REQUIREMENTS FBC
SUPT. & STAFF SPECIFY & DEFINE OBJ., IND. & CONSTRAINTS
M#2
R#1
ANALYSIS & SUMMARIZATION-FBC
M#3
BOARD REVIEW & APPROVE
YES
NO
M#4
R#2
POLICY GUIDELINES & R#1-MODIFIED
F#16
OPERATIONS PROJ. ALT.-PROPOSED
F#16.1
CAP. IMPR. PROJ. ALT.-PROPOSED
F#1
PROP
PROJ.
SU
M#1
F#15
FINANCIAL FEASIBILITY FBC
*
*
*

* ADDITIONAL REVENUE - OPER. & CAP. IMPR. PROJ's.

M#1-COMPLETION OF REVIEW AND RE-PROJECTION OF THE PREVIOUS YEAR'S FIVE-YEAR PLAN.

M#2-COMPLETION OF THE ANALYSIS AND SUMMARIZATION REPORT ON THE PREVIOUS YEAR'S FIVE-YEAR PLAN WITH RECOMMENDED CHANGES.

M#3-APPROVAL OF THE REPORT ON THE PREVIOUS YEAR'S FIVE-YEAR PLAN AND RECOMMENDED CHANGES.

M#4-COMPLETION OF THE LIST OF OBJECTIVES, DESIRED INDICATOR LEVELS, AND CONSTRAINTS.

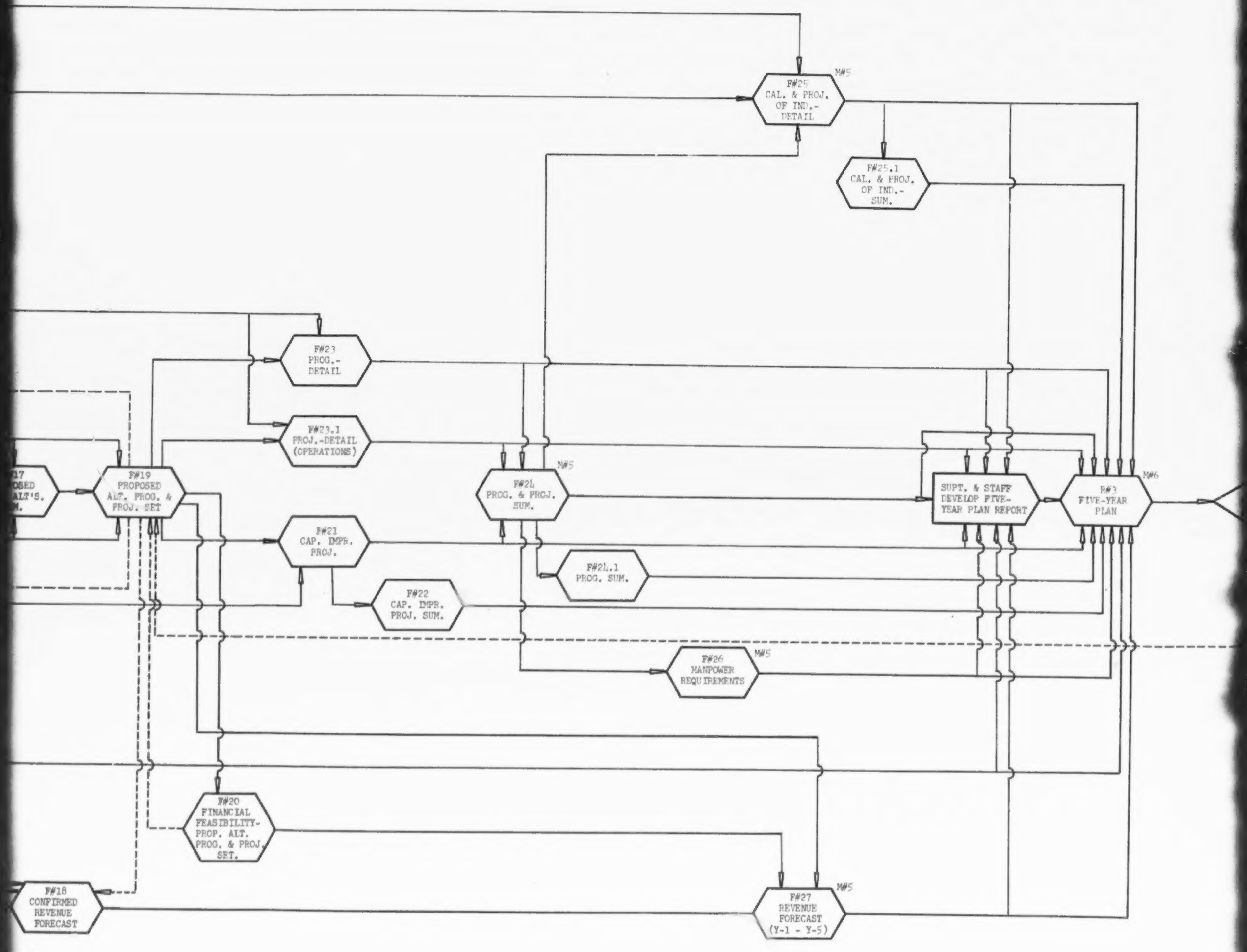
* ADDITION
REVENUE-
OPER. & C
IMPR. PRO

28b

28c

YSTEM FOR SCHOOL DISTRICTS
JAL SYSTEM

NT OF REPORTS AND PLANS
HE APPENDIX

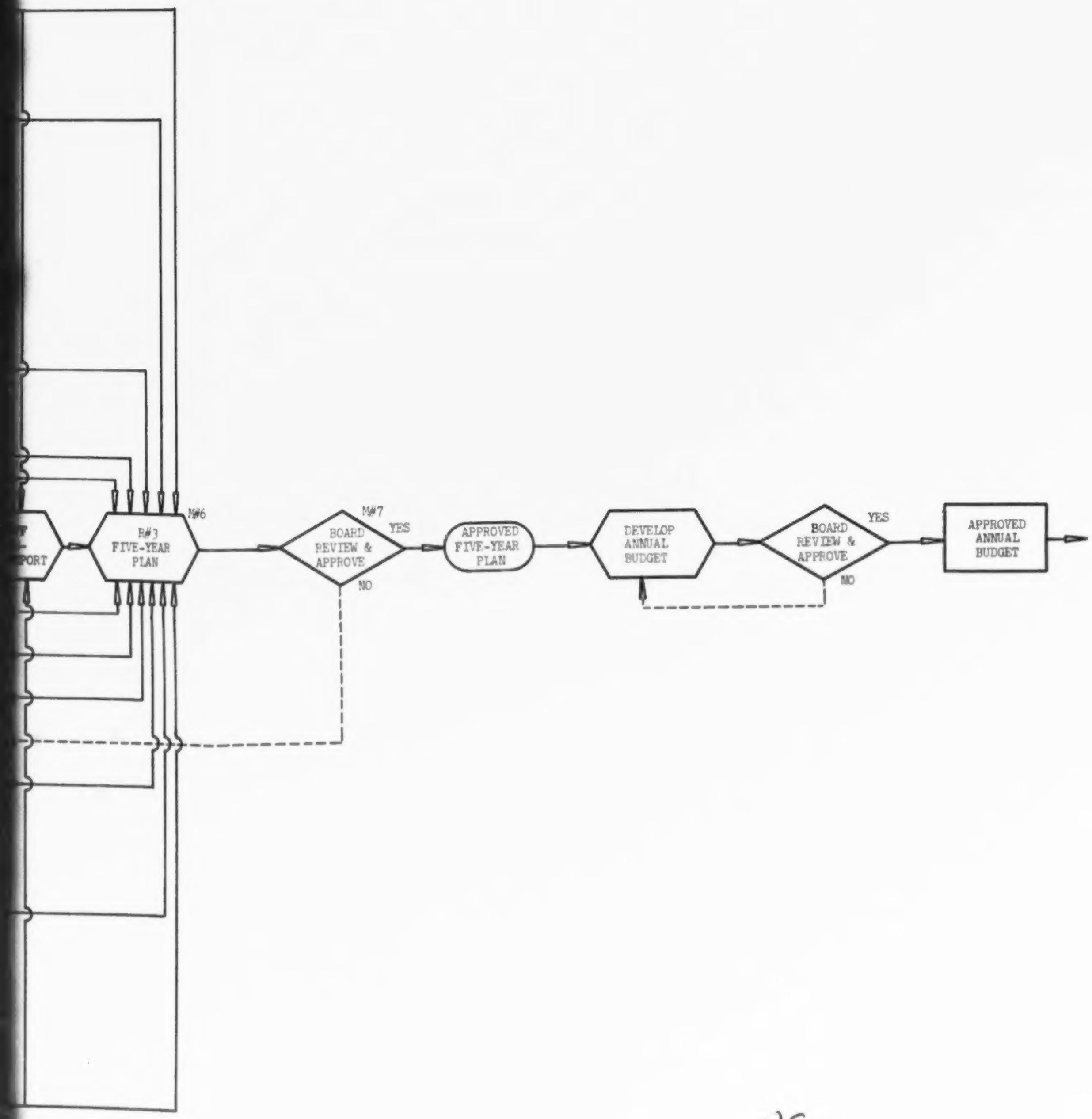

F#25
CAL. & PROJ. OF IND.- DETAIL
M#5
F#25.1
CAL. & PROJ. OF IND.- SUM.
F#23
PROG.- DETAIL
F#23.1
PROJ.-DETAIL (OPERATIONS)
17
OSED
ALT'S.
M.
F#19
PROPOSED ALT. PROG. & PROJ. SET
F#24
PROG. & PROJ. SUM.
M#5
SUPT. & STAFF DEVELOP FIVE-YEAR PLAN REPORT
R#3
FIVE-YEAR PLAN
M#6
F#21
CAP. IMPR. PROJ.
F#24.1
PROG. SUM.
F#22
CAP. IMPR. PROJ. SUM.
F#26
MANPOWER REQUIREMENTS
M#5
F#20
FINANCIAL FEASIBILITY-PROP. ALT. PROG. & PROJ. SET.
F#18
CONFIRMED REVENUE FORECAST
F#27
REVENUE FORECAST (Y-1 - Y-5)
M#5

L
AP.
J's.

M#5-COMPLETION OF THE DEVELOPMENT AND PROJECTION OF THE NEW SET OF PROGRAMS AND PROJECTS FOR FIVE-YEARS.

M#6-COMPLETION OF THE DEVELOPMENT OF THE NEW FIVE-YEAR PLAN.

M#7-
NEW


PORT
M#6
R#3
FIVE-YEAR
PLAN
M#7
BOARD
REVIEW &
APPROVE
YES
NO
APPROVED
FIVE-YEAR
PLAN
DEVELOP
ANNUAL
BUDGET
BOARD
REVIEW &
APPROVE
YES
NO
APPROVED
ANNUAL
BUDGET

M#6-COMPLETION OF THE DEVELOPMENT OF THE NEW FIVE-YEAR PLAN.

M#7-APPROVAL OF THE NEW FIVE-YEAR PLAN.

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Milestone #2

After completing the analysis and summarization of either the five-year plan developed during the last school year or the present operation projected five years in the future, the superintendent and his staff are now in a position to develop Report #1: Analysis and Summarization of the Final Base Case. Identification of problems, specification and definition of suggested objectives, setting of desired indicator levels, and identification of constraints is a major set of tasks that must be accomplished before Report #1 can be written. Report #1, which deals with the recomputed Final Base Case (five-year plan), including re-estimating indicator levels, new revenue forecasts, suggested objectives, desired indicator levels, and identified constraints, is prepared and presented to the board of school directors for their review and approval.

Milestone #3

The board reviews, modifies, and approves the objectives and desired indicator levels that are incorporated in Report #1. This review and approval is based on the recommendations of the superintendent concerning the problems revealed in the analysis and summarization of the Final Base Case.

Milestone #4

The superintendent prepares policy guidelines explaining the decisions of the board which establish the basis for the preparation of a new five-year plan for the school district.

Milestone #5

Program and project managers, in light of the policy guidelines, prepare project alternatives which may involve any, or all three, of the following options: (1) continue the project as established, (2) shift all or part of the resource allocations to a different project, or (3) alter the project. The proposed project alternatives inlcude information on project costs, changes in indicator levels, statement of project objective(s), and project description.

Proposed project alternatives are summarized for the school district as a whole. From this list the superintendent forms alternative programs and project sets which include information on their overall cost, desired changes in indicator levels, and manpower requirement. Overall financial feasibility of the alternative program and project sets is established using the new revenue estimates and the summary costs of the alternative program and project sets. It may be necessary during this portion of the procedure to loop back through the system and develop new project alternatives. The superintendent selects from among the alternative program and project sets the most satisfactory or "best" set.

Forms #16 through #27 must be completed before Milestone #5 can be achieved.

The EPPBS Procedure provides for the analysis of program and project costs separately and for the merging or re-allocation of project costs into program costs. This aspect of the procedure permits the most effective planning by encouraging the introduction of change and innovation through the concept of the project and, at the same time, retains the notion of continuity through the concept of a continuous program set.

Milestone #6

The superintendent and his staff prepare the new five-year plan which forms Report #3. The report includes: (1) the "best" program and project set; (2) objectives; (3) desired, expected, and current indicator levels; (4) constraints; and (5) revenue estimates. The report is presented to the board for their review and approval.

Milestone #7

The board reviews, modifies, and approves Report #3: Five-Year Plan. During the course of the review and modification it may be necessary to loop back through the system to develop new alternative program and project sets. The approved Five-Year Plan provides the basis for the preparation, review and approval of the annual budget. The school district should follow its normal method for the preparation of its budget.

Suggested Work Schedule

The work schedule contained in this section is shown in Figure 2 and has been prepared to assist the school district superintendent in completing the EPPBS Cycle. The schedule was developed on the following assumptions: (1) key top administrative officers of the school district have been thoroughly trained in the use of the manual version - PPBS - Version I, Model 2; (2) intermediate unit key administrative personnel have been similarly trained; and (3) the intermediate unit has agreed to work closely with the school district superintendent in the development of your respective five-year plans.

It is expected that a more detailed work schedule and data and information flow procedure will be worked out for the EPPBS Cycle by the school district superintendent and the intermediate unit.

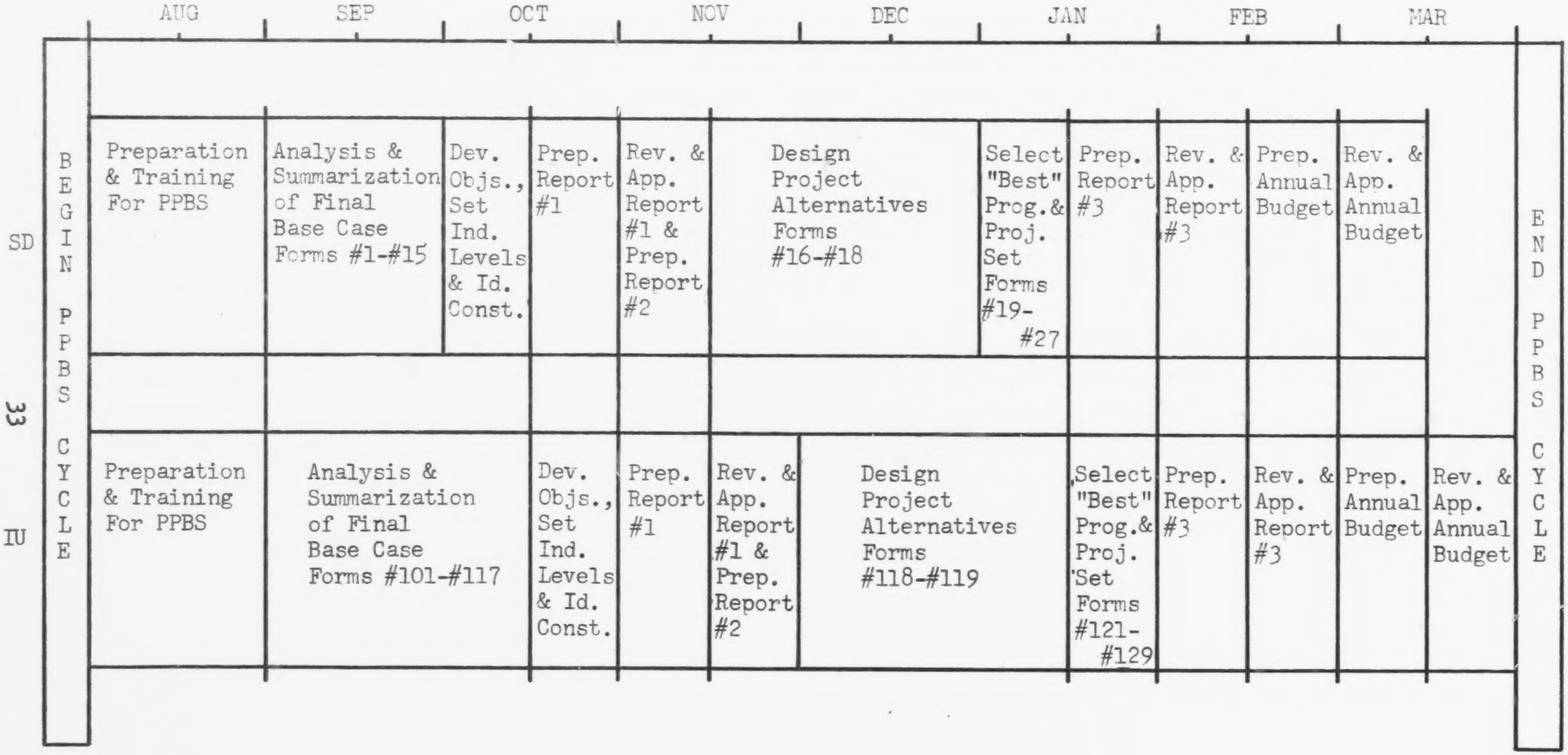
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
SD
IU
BEGIN PPBS CYCLE
END PPBS CYCLE
Preparation & Training For PPBS
Analysis & Summarization of Final Base Case Forms #1-#15
Dev. Objs., Set Ind. Levels & Id. Const.
Prep. Report #1
Rev. & App. Report #1 & Prep. Report #2
Design Project Alternatives Forms #16-#18
Select "Best" Prog.& Proj. Set Forms #19-#27
Prep. Report #3
Rev. & App. Report #3
Prep. Annual Budget
Rev. & App. Annual Budget
Preparation & Training For PPBS
Analysis & Summarization of Final Base Case Forms #101-#117
Dev. Objs., Set Ind. Levels & Id. Const.
Prep. Report #1
Rev. & App. Report #1 & Prep. Report #2
Design Project Alternatives Forms #118-#119
Select "Best" Prog.& Proj. Set Forms #121-#129
Prep. Report #3
Rev. & App. Report #3
Prep. Annual Budget
Rev. & App. Annual Budget

Fig. 2. PPBS Cycle work schedule of the cooperating school districts (SD) and the intermediate unit (IU).

August

1. The school district superintendent meets with his staff to discuss the work schedule for the coming PPBS Cycle. The assignment of responsibilities for completing the various tasks is made at this time. Manuals, extra forms and worksheets are handed out.
2. Specialized training sessions are established for staff members who did not participate in previous training sessions and for clerks who will be assigned certain data gathering and analysis tasks.
3. Data files are examined and brought up-to-date. See the appendix for suggested files and file content.
4. The intermediate unit, if it is cooperating with the school district in the development of five-year plans, will perform the same tasks during August.

September

1. The following forms are completed during this period:
    a. Form #1: Enrollment Forecast Analysis
    b. Form #2: New Enrollment Forecast
    c. Form #3 and #3.1: Program and Project Crosswalk
    d. Form #4: Indicator Level - Summary
    e. Form #5: Base Case - Program and Project Summary
    f. Form #6: Calculations and Projections of Indicators for Base Cases - Detail
    g. Form #7: Adjusted Base Case - Program and Project Summary
    h. Form #8: Capital Improvement Project
    i. Form #9: Capital Improvement Project(s) - Summary
    j. Form #10: Program - Detail
    k. Form #11: Program Review
    l. Form #12: Final Base Case - Program and Project Summary
    m. Form #13: Manpower Requirements - Final Base Case
    n. Form #14: Revenue Forecast
    o. Form #15: Financial Feasibility - Final Base Case
2. The intermediate unit will need the data and resulting information provided on the school district forms #1 through #15 so that it may complete Forms #101 through #117 by mid-October. The data and information flow between the school district and the intermediate unit

should be established according to a clearly defined schedule.

Early to Mid-October

1. The school district superintendent and staff specify and define the objectives of the school district. These objectives should be based on the problems revealed in the analysis and summarization of the Final Base Case. The setting of desired indicator levels will be based on the same information and data.
2. Constraints are identified during this period.
3. The first step should be taken to identify feasible solutions or courses of action to resolve the problem identified in the analysis and summarization of the Final Base Case.
4. A close working relationship with the intermediate unit should be developed during this period. The intermediate unit's task of formulating objectives, setting desired indicator levels, and considering feasible solutions for top priority problems is dependent upon this relationship.
5. Development of the format of Report #1: Analysis and Summarization of the Final Base Case concludes this work period.
6. The intermediate unit should complete Forms #101 through #117 by Mid-October.

Mid to Late-October

1. Report #1: Analysis and Summarization of the Final Base Case is prepared for presentation to the school district board of school directors.
2. The intermediate unit specifies and defines its objectives, sets its desired indicator levels, and identifies the constraints. This task, as indicated above, is dependent upon a close working relationship with the school district.

Early to Mid-November

1. Report #1 should be presented to the board of school directors for review and approval. The report provides an excellent analysis of the status of the school district and the implications of its present level of effort for the next five years.
2. Report #2: Policy Guidelines is prepared by the school district superintendent, following the approval of Report #1, and is to be disseminated among the board members and staff of the school district and with the intermediate unit superintendent.
3. The intermediate unit prepares Report #1: Analysis and Summarization of the Final Base Case. The preparation of this report is dependent upon the information contained in the approved Report #1 of the school district.

Mid-November to Late-December

1. The design of project alternatives, development of alternative program and project sets, and completion of revenue estimates should be accomplished during this period. A close working relationship between the intermediate unit and the school district may be useful in the development of certain relevant project alternatives.
2. The following forms should be completed during this period:
   a. Form #16: Operations Project Alternative - Proposed
   b. Form #17: Proposed Project Alternatives - Summary
   c. Form #18: Confirmed Revenue Forecast
3. The intermediate unit presents Report #1: Analysis and Summarization of the Final Base Case to its board for review and approval. Upon approval of this report the intermediate unit superintendent prepares Report #2: Policy Guidelines and disseminates this report to his board and staff and to the school district.
4. The intermediate unit begins the design of project alternatives, development of alternative program and project sets, and development of a revenue estimate. A close working relationship with the school district will be helpful to the intermediate unit in the development of relevant project alternatives.

Early January to Mid-January

1. Examination of all feasible program and project sets and the selection of the "best" set takes place during this period. The selection of the "best" program and project set may be done in consultation with the intermediate unit, particularly, if the selection is dependent in part upon the resources of the intermediate unit.
2. The following forms should be completed during this period:
    - a. Form #19: Proposed Alternative Program and Project Set
    - b. Form #20: Financial Feasibility - Proposed Alternative Program and Project Set
    - c. Form #21: Capital Improvement Project
    - d. Form #22: Capital Improvement Project(s) - Summary
    - e. Form #23: Program - Detail
    - f. Form #24: Program and Project Summary
    - g. Form #25: Calculations and Projections of Indicators - Detail
    - h. Form #26: Manpower Requirements
    - i. Form #27: Revenue Forecast
3. The intermediate unit should complete the design of project alternatives, development of alternative

program and project sets, and development of a revenue estimate.

Mid to Late-January

1. The preparation of the school district's Report #3: Five-Year Plan is completed during this period.
2. The intermediate unit examines all feasible program and project sets and selects the "best" set. The selection of the "best" program and project set should be done in consultation with the school district. Forms #121 through #129 should be completed during this period.

Early to Mid-February

1. Review and approval of a school district's Report #3 should take place during this period. Copies of this report should be disseminated among the school district's board and staff and with the intermediate unit's superintendent.
2. The intermediate unit prepares Report #3: Five-Year Plan during this period. The preparation of this report is dependent upon the outcome of the deliberations of the school district's board concerning the school district's Report #3.

Mid to Late-February

1. The school district prepares the annual budget.
2. The intermediate unit's Report #3 should be approved during this period.

Early to Mid-March

1. The school district's annual budget should be approved during this period; however, the delay of budget approval will not affect the general timing of the PPBS Cycle. If changes occur in the annual budget that have a serious impact on the Five-Year Plan, the plan should be modified to reflect these changes.
2. The intermediate unit will prepare its annual budget during this period. Delay of approval of the school district's budget may have an impact on the intermediate unit's budget. If delay occurs in the approval of the school district's budget it may be necessary for the intermediate unit to "tentatively approve" certain programs and projects dependent upon school district support pending final approval of the local district's budget. If the PPBS Cycle runs smoothly, the intermediate unit should complete the budget review and approval by the end of March.

Final Comments Concerning the Completion of the Forms, Worksheets, and Reports

The primary goal is to plan for and project the expenditures of all foreseeable programs and projects. This involves not only accounting for all the programs and projects which will generate expenditures, but also estimating as closely as possible how much they will cost. Every person responsible for some portion of the planning and programming should be conscientious in making these estimates, recognizing, of course, that the farther out into the five-year period that estimates are made, the greater the chance of error.

Expenditure estimates for base cases are restricted to those programs and projects which had been planned and programmed in the previous Five-Year Plan or are reflected in the current budget. Expenditure estimates will change only where changes in policy have been made since the plan was adopted, where policy rules will be violated, or where assumptions incorporated in the plan are no longer valid.

Expenditures for project alternatives are entirely new and should be based on the activities which are to be undertaken for each project alternative.

The following instructions apply to the completion of all forms, worksheets, and reports:

1. Round all amounts to the nearest $10 for the first year and nearest $100 for all additional years.

2. Be concise and factual in all explanations.
3. Information and data which cannot be supplied in the space given on the forms, but which is vital to an understanding of the school district's plans and programs should be inserted on the attached sheets.

Form #1: Enrollment Forecast Analysis

1. Fill in the name of your school district.

2. Date measured is November of the current year.

3. Use the following procedure to perform your calculations:

   a. Use the enrollment projections employed to develop your current budget in the Expected Enrollment Column.

   b. Use your current enrollment in the Current Enrollment Column.

   c. Record the difference (D) between the Expected Enrollment (EE) and the Current Enrollment (CE) in the Difference Column.

      EE-CE = D + or -

   d. Calculate the percentage difference (PD) and record in the Percentage Column.

      (D/CE) x 100 = PD + or -

   e. Calculate the average daily membership (ADM) for EE and CE by performing the seven steps outlined on Worksheet #1.1.

WORKSHEET #1.1

Form #1: Enrollment Forecast Analysis

Directions for Calculating Average Daily Membership (ADM) for EE and CE

Step 1

Use the end of the year enrollment figures for the past three years. Weight the kindergarten enrollments by multiplying by 0.5 if the kindergarten meets for a single session (WE), if not, add the kindergarten enrollment to grades 1-12 and special education (elementary and secondary) enrollments (NWE).

	School Year	Kdg.	1-12	Sp. Ed.	Total
WE or NWE					
WE or NWE					
WE or NWE					

Expected Level ______/ 4 = ______

Current Level ______/ 4 = ______

Step 2

Use the end of the year ADM figures for the past three years.

School Year	ADM

Step 3

Divide the ADM for each year by the WE or NWE for that year to arrive at the ratio (R) ADM is to WE or NWE for each year. Add the three ratios and divide by three to determine the mean ratio (MR) for the three years.

School Year	ADM		WE or NWE		R
________	___	/	________	=	_____
________	___	/	________	=	_____
________	___	/	________	=	_____
			Total R's		_____

R's / 3 = MR

____/ 3 = ____

Step 4

Use the expected enrollment (EE) figures. Weight the kindergarten enrollment by multiplying by 0.5 if the kindergarten meets for a single session (WE), if not, add the kindergarten enrollment to grades 1-12 and special education (elementary and secondary) enrollments (NWE).

	Kdg.	1-12	Sp. Ed.	Total
WE or NWE	____	____	________	_____

Step 5

Multiply the WE or NWE for EE by the MR to find the ADM for EE.

WE or NWE x MR = ADM

___ ___ x __ = ___

Transfer the ADM for EE to the appropriate cell on Form #1.

Step 6

Use the current enrollment (CE) figures. Weight the kindergarten enrollment by multiplying by 0.5 if the kindergarten meets for a single session (WE), if not, add the kindergarten enrollment to grades 1-12 and special education (elementary and secondary) enrollments (NWE).

	Kdg.	1-12	Sp. Ed.	Total
WE or NWE	____	____	________	_____

Step 7

Multiply the WE or NWE for CE by the MR to find the ADM for CE.

WE or NWE x MR = ADM

____ x _____ = _____

Transfer the ADM for CE to the cell provided on Form #1.

ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	ENROLLMENT FORECAST ANALYSIS

Educational Unit:

Grade Level	Date Measured	Expected Enrollment	Current Enrollment	Difference(±)	%(±)	Comment
Kindergarten						
1						
2						
3						
4						
5						
6						
Total (1-6)						
Spec. Ed. - El.						
7						
8						
9						
10						
11						
12						
Total (7-12)						
Spec. Ed. - Sec.						
Total Enrollment						
ADM						

Form #1

Form #2: New Enrollment Forecast

1. Fill in the name of your school district.

2. Transfer the Current Year's enrollment figures forward from Form #1.

3. You may use the Government Studies Center's pupil population forecast procedure outlined in the Appendix or you may use another procedure that is more satisfactory for Y-1 through Y-5.

4. Record the pupil population forecast figures for each year in Columns Y-1 through Y-5.

5. The Government Studies Center's forecast procedure does not handle special pupils. You will need to develop your own forecast procedure to handle both elementary and secondary special pupils.

6. Calculate the ADM for Y-1 through Y-5 by performing the two steps shown on Worksheet #2.1.

7. Calculate the weighted pupil enrollment - staff (WPE-S) for Y-1 through Y-5 by following the five steps on Worksheet #2.2.

8. The weighted pupil enrollment - finance (WPE-F) for Y-1 through Y-5 is derived according to the five steps shown on Worksheet #2.3.

WORKSHEET #2.1

Form #2: New Enrollment Forecast

Directions for Calculating the Average Daily Membership (ADM) Y-1 through Y-5

Step 1

Use the Y-1 through Y-5 enrollment figures. Weight the kindergarten enrollments by multiplying by 0.5 if the kindergarten meets for a single session (WE), if not, add the kindergarten enrollments to grades 1-12 and special education (elementary and secondary) enrollments (NWE).

School Year	Kdg.	1-12	Sp. Ed.	Total
Y-1 WE or NWE				
Y-2 WE or NWE				
Y-3 WE or NWE				
Y-4 WE or NWE				
Y-5 WE or NWE				

Step 2

Multiply the total weighted (WE) or non-weighted (NWE) enrollments for each year by the mean ratio (MR) derived on Worksheet #1.1. Transfer to the appropriate cell on Form #2.

School Year	WE or NWE		MR		ADM
Y-1		x		=	
Y-2		x		=	
Y-3		x		=	
Y-4		x		=	
Y-5		x		=	

WORKSHEET #2.2

Form #2: New Enrollment Forecast

Directions for Calculating Weighted Pupil Enrollment-Staff (WPE-S) for Y-1 through Y-5

	Y-1	Y-2	Y-3	Y-4	Y-5
Step 1 Multiply the kindergarten enrollments by 0.5 if the kindergarten meets for a single session, if not, do not alter figures.	___	___	___	___	___
Step 2 Multiply the grades 1-6 and special education elementary (tuition special education pupils excluded) enrollments by 1.0.	___	___	___	___	___
Step 3 If vocational-technical pupils are taught within the school district skip this step. If they are taught at a vocational-technical school multiply the vocational-technical pupils enrollment figures by 0.55.	___	___	___	___	___
Step 4 Multiply the grades 7-12 (exclusive of vocational-technical students taught at a vocational-technical school) and special education-secondary (tuition special education pupils excluded) enrollments by 1.1.	___	___	___	___	___
Step 5 Add the weighted enrollments together. Transfer these figures to the appropriate cells on Form #2.	___	___	___	___	___

WORKSHEET #2.3

Form #2: New Enrollment Forecast

Directions for Calculating Weighted Pupil Enrollment Finance (WPE-F) for Y-1 through Y-5

	Y-1	Y-2	Y-3	Y-4	Y-5
Step 1					
Multiply the kindergarten enrollments by 0.5 if the kindergarten meets for a single session, if not, do not alter figures.	___	___	___	___	___
Step 2					
Multiply the grades 1-6 and special education-elementary (tuition special education pupils excluded) enrollments by 1.0.	___	___	___	___	___
Step 3					
If vocational-technical pupils are taught within the school district skip this step. If they are taught at a vocational-technical school multiply the vocational-technical pupils enrollment figures by 0.63.	___	___	___	___	___
Step 4					
Multiply the grades 7-12 (exclusive of vocational-technical students taught at a vocational-technical school) and special education-secondary (tuition special education pupils excluded) enrollments by 1.25.	___	___	___	___	___

Step 5

Add the weighted enrollments together. Transfer these figures to the appropriate cells on Form #2. ___ ___ ___ ___ ___

ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	NEW ENROLLMENT FORECAST

Educational Unit:

Fiscal Year / Grade Level	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Kindergarten						
1						
2						
3						
4						
5						
6						
Total (1-6)						
Spec. Ed. - El.						
7						
8						
9						
10						
11						
12						
Total (7-12)						
Spec. Ed. - Sec.						
Total Enrollment						
ADM						
WPE-S						
WPE-F						

Form #2

Form #3: Program and Project Crosswalk and Form #3.1: Program Crosswalk

1. Columnar paper should be used for these forms.

2. Use the following procedure for the preparation of Form #3:

   Program and Project Crosswalk:

   a. The columns are headed as follows from left to right:

      (1) Column # 0 - Expenditure Account
      (2) Column # 1 - Policy and Executive (PE)
      (3) Column # 2 - Comprehensive Planning (CP)
      (4) Column # 3 - Information and Liaison (IL)
      (5) Column # 4 - Community Services (CS)
      (6) Column # 5 - Coordinate Support Services (CSS)
      (7) Column # 6 - Early Childhood Instruction (ECI)
      (8) Column # 7 - Elementary Instruction (EI)
      (9) Column # 8 - Secondary Instruction (SI)
      (10) Column # 9 - Vocational-Technical Instruction (VTI)
      (11) Column #10 - Special Instruction (SI)
      (12) Column #11 - Continuing Instruction (CI)
      (13) Column #12 - Instructional Support Services (ISS)
      (14) Column #13 - Nursing (N)
      (15) Column #14 - Medical (M)
      (16) Column #15 - Dental (D)
      (17) Column #16 - Psychological (P)
      (18) Column #17 - Health Support Services (HSS)
      (19) Column #18 - General Services (GS)
      (20) Column #19 - Pupil Transportation (PT)
      (21) Column #20 - Food Services (FS)
      (22) Column #21 - Facilities (F)
      (23) Column #22 - Fixed Charges (FC)
      (24) Column #23 - Business Support Services (BSS)
      (25) Column #24 - Head these columns by the title of the operations or capital improvement projects currently underway. An example of an operation project is an Elementary and Secondary Education Act, Title I Project. A new elementary building under construction is an example of a capital improvement project.

   b. The lines in Column #0 are headed by the General Fund Expenditure Account numbers 0111 through 1488 as recommended in the *Manual of Accounting and Related Financial Procedures for Pennsylvania School Systems*.[3] Only use those accounts shown in your current year's budget. See Appendix B for account numbers.

c. Use the following approach in translating program(s) used in the classification system employed in the PPBS Procedure:

   (1) Record your data on Worksheet #3.1. The expenditures for each account number must be broken into Salary (S), Non-Salary (NS), and Capital Outlay (CO), and Debt Service (DS) by program and project.

   (2) Use Table 1 to determine the relationship of accounts to programs. This table has been prepared from the materials in Appendices A and B. Please note that the salary of the superintendent, assistant superintendents, administrative assistants and assistant superintendent in charge of business are prorated over several programs.

   (3) The decision concerning the amount of proration of a given expenditure over several programs is yours.

   (4) The relationship of account numbers to projects is based on the actual budget for each project. All costs for a given project must be recorded under the column designated for the project.

   (5) Transfer the data from Worksheet #3.1 to Form #3. You can now view your entire annual budget by program-project and expenditure account at one glance.

3. Use the following procedure to develop Form #3.1: Program Crosswalk:

   a. The columns are headed as follows:

      (1) Column # 0 - Programs and Projects
      (2) Column # 1 - Policy and Executive (PE)
      (3) Column # 2 - Comprehensive Planning (CP)
      (4) Column # 3 - Information and Liaison (IL)
      (5) Column # 4 - Community Services (CS)
      (6) Column # 5 - Coordinate Support Services (CSS)
      (7) Column # 6 - Early Childhood Instruction (ECI)
      (8) Column # 7 - Elementary Instruction (EI)
      (9) Column # 8 - Secondary Instruction (SI)
      (10) Column # 9 - Vocational-Technical Instruction (VTI)
      (11) Column #10 - Special Instruction (SI)

(12) Column #11 - Continuing Instruction (CI)
(13) Column #12 - Instructional Support Services (ISS)
(14) Column #13 - Nursing (N)
(15) Column #14 - Medical (M)
(16) Column #15 - Dental (D)
(17) Column #16 - Psychological (P)
(18) Column #17 - Health Support Services (HSS)
(19) Column #18 - General Services (GS)
(20) Column #19 - Pupil Transportation (PT)
(21) Column #20 - Food Services (FS)
(22) Column #21 - Facilities (F)
(23) Column #22 - Fixed Charges (FC)
(24) Column #23 - Business Support Services (BSS)

b. The lines in Column 0 are headed by the column headings on Form #3.

c. The purpose of this crosswalk is to enable you to group all school district expenditures for both program and project under the twenty-three programs listed in Appendix A.

d. All expenditures for projects must be grouped under the appropriate programs. Use a second copy of Worksheet #3.1 to assist you in making these transfers.

4. The expenditures by account numbers are allocated to programs and projects on Form #3. The project expenditures are merged into programs on Form #3.1. These crosswalks provide a convenient basis for generating deaggregated and aggregatted Base Case, Adjusted Base Case, and Final Base Case reports. The deaggregated or program-project expenditure projection reports are useful for analysis and planning at the staff level. The aggregated or program expenditure projection reports provide useful tools for conveying an understandable picture of the school district's expenditures over a five-year planning horizon to the school board and the general public.

WORKSHEET #3.1

Form #3 and #3.1 - Program and Project Crosswalk

Program or Project	Acct. No.	Salary	Non-Salary	Capital Outlay	Debt Service	Total

TABLE 1

RELATIONSHIP OF EXPENDITURE ACCOUNT TO PPBS PROGRAM CLASSIFICATION

Program / Exp. Account Number	Coord. Program Area					Instructional Pro. Area							Health Pro. Area					Business Program Area					
	PE	CP	IL	CS	CSS	ECI	EI	SI	VTI	SI	CI	ISI	N	M	D	P	HSS	GS	PT	FS	F	FC	BSS
0111	x																						
0112																							
Supt.	x	x	x																				
Asst. Supt.'s	x	x	x		x							x					x						x
Admn. Asst.		x	x																x				
Clerical					x																		
Sick Leave					x																		
0113																							
Asst. Supt.	x	x	x																				x
Clerical																							x
0114					x																		
0115																		x					
0121					x							x					x						x
0131					x																		
0124					x																		
0125																							x
0134					x																		
0135																		x					
0151																		x					
0154					x																		
0153																		x					
0159					x																		
0211												x											
0212												x											
0213						x	x	x	x	x	x	(According to Program)											
Sick Leave												x											
0214												x											
Sick Leave												x											
0216												x											
0218												x											
0219												x											
0221						x	x	x	x	x	x	(According to Program)											
0222						x	x	x	x	x	x	(According to Program)											
0223												x											
0224												x											
0229												x											
0231												x											
0239												x											
0250												x											
0311												x											
0312												x											
0313												x				x							

Page 1 of 3

Program Exp. Account Number	Coord. Program Area					Instructional Pro. Area							Health Pro. Area					Business Program Area					
	PE	CP	IL	CS	CSS	ECI	EI	SI	VTI	SI	CI	ISS	N	M	D	P	S	GS	PT	FS	F	FC	BSS
0319												x					x						
0320												x					x						
0330												x					x						
0350												x				x							
0411													x	x	x	x	x	(According to Pro)					
0412														x		x							
0413													x										
0414															x								
0415													x				x						
0416													x	x	x	x	x	(According to Pro.)					
0418																	x						
0419																	x						
0421															x								
0422														x									
0431															x								
0432														x			x						
0433														x	x		x						
0445																	x						
0451															x(or)		x						
0452															x(or)		x						
0453																	x						
0511																			x				
0512												x							x				
0513																			x				
0519					x														x				
0521																			x				
0523																			x				
0529																			x				
0531																			x				
0532																			x				
0533																			x				
0539																			x				
0546																			x				
0551																			x				
0553																			x				
0555																			x				
0556																			x				
0557																			x				
0611																					x		
0612																					x		
0619																					x		
0621																					x		
0622																					x		
0631																					x		
0639																					x		
0641																					x		
0642																					x		
0643												x											
0644					x												x						x
0650																						x	

Table 1

Page 2 of 3

Program / Exp. Account Number	Coord. Program Area					Instructional Pro. Area							Health Pro. Area					Business Program Area					
	PE	CP	IL	CS	SS	ECI	EII	SII	VTI	SII	CII	ISS	N	M	D	P	HSS	GS	PT	FS	F	FC	BSS
0831																						x	
0832																						x	
0833																						x	
0834																						x	
0835																						x	
0836																						x	
0837																						x	
0838																					x		
0839																						x	
0961																				x			
0962																				x			
1010												x											
1020												x											
1030												x											
1040												x											
1048												x											
1050												x											
1063												x											
1110				x																			
1120				x																			
1130				x																			
1149				x																			
1150				x																			
1241																					x		
1242																					x		
1243												x											
1244				x													x						x
1245																	x						
1246																			x				
1247																				x			
1248												x											
1249				x																			
1265																					x		
1266																					x		
1371																					x		
1372																		x					
1373																		x					
1374																		x					
1375																		x					
1379																		x					
1481									x														
1482						x	x	x	x	x	(According to Program)												
1483						x	x	x	x	x	(According to Program)												
1484										x													
1485										x													
1486						x	x	x	x	x	(According to Program)												
1487								x															
1488									x														

Table 1

Form #4: Indicator Level - Summary

1. Fill in the name of your school district.

2. Fill in the names of the indicators. Each indicator is listed and defined below:

    a. Indicator #1 - Excess Enrollment (EE) - Defined as total average daily membership in the district minus the total class room capacity.

    b. Indicator #2 - Classroom Teachers per 1,000 Weighted Pupils (CTWP) - Defined as total number of classroom teachers in the district divided by the total weighted enrollment, times 1,000.

    c. Indicator #3 - Mean Cumulative Course Offerings (Grades 7-12) (MCCO)- Defined as total number of courses for grades 7 through 12 of 200 minutes per week.

    d. Indicator #4 - Professional Instructional Specialists per 1,000 Weighted Pupils (ISWP) - Defined as total number of instructional specialists in the district divided by the total weighted enrollment, times 1,000.

    e. Indicator #5 - Total Dollar Expenditures for Curriculum Materials , Supplies and Library Books Per Weighted Pupil (TDEMWP) - Defined as the total dollars allocated in the current budget for curriculum materials, supplies, and library books divided by the total weighted enrollment.

    f. Indicator #6 - Net Total Expenditures Per Weighted Pupil (NTEWP) - Defined as the net total expenditures divided by the total weighted enrollment.

    g. Indicator #7 - Professional Staff Turnover Rate in Percent Per Year (PSTR) - Defined as number of professional staff separations for a given school year, divided by total professional staff budgeted for that year. Multiply the resulting quotient by 100.

    h. Indicator #8 - Percent of Professional Staff with Master Degrees or More (PPSMD) - Defined as the number of professional staff at the beginning of a given school year with at least a masters degree, divided by total professional staff budgeted for that year. Multiply the resulting quotient by 100.

i. Indicator #9 - Percent Graduating Class Attending Post High School Education (PGCAPHE) - Defined as the number of previous year's graduating class attending some form of post high school education full or part time, divided by total number in previous year's graduating class. Multiply the resulting quotient by 100.

j. Indicator #10 - Drop-Out Percent for Grades 10-12 (DOP) - Defined as total number of pupils who would have been in 10, 11 and 12 grades during the current school year but are classified on your school records as "withdrew-drop-out" as of the beginning of the current school year, divided by the total enrollment in grades 10, 11 and 12 at the beginning of the current school. Multiply the resulting quotient by 100.

k. Indicator #11 - Language Achievement - Deviation from Grade Level (LADGL) - Defined as the mean score on the language portions of achievement test administered to grades 3, 6, 9, and 12, or other grades close to these levels, converted to "months behind or ahead of grade level" for each grade, based on test norms for that grade.

l. Indicator #12 - Mathematics Achievement - Deviation from Grade Level (MADGL) - Defined in the same manner as Indicator #11, except scores of mathematics portions of the achievement tests are used.

3. Calculate the indicators according to the steps outlined on the worksheets listed below and record the information in the appropriate cells on Form #4:

   a. Indicator #1 - Worksheet #4.1

   b. Indicator #2 - Worksheet #4.2

   c. Indicator #3 - Worksheet #4.3

   d. Indicator #4 - Worksheet #4.4

   e. Indicator #5 - Worksheet #4.5

   f. Indicator #6 - Worksheet #4.6

   g. Indicator #7 - Worksheet #4.7

   - h. Indicator #8 - Worksheet #4.8
   - i. Indicator #9 - Worksheet #4.9
   - j. Indicator #10 - Worksheet #4.10
   - k. Indicator #11 - Worksheet #4.11
   - l. Indicator #12 - Worksheet #4.12

4. The Variation Column allows you to show the high and low levels for each indicator if you desire.

5. Calculate the difference (D) between Expected Level (EL) and Current Level (CL) and enter into the column marked Difference.

   EL-CL = D + or -

WORKSHEET #4.1

Form #4: Indicator Level-Summary

Directions for Calculating Indicator #1

Excess Enrollment (EE) - Defined as total average daily membership in the district minus the total class room capacity.

Step 1

Record the average daily membership (ADM) from Form #1 below:

Expected Enrollment (Expected Level) __________

Current Enrollment (Current Level) __________

Step 2

Record the total number of standard academic classrooms (TNSAC) estimated to be available (Expected Level) for use during the current year and the actual number (Current Level) available for use. Academic classrooms exclude laboratories and special rooms.

TNSAC (Expected Level) __________

TNSAC (Current Level) __________

Step 3

Calculate the total classroom capacity (TCC) by multiplying the TNSAC by 25 pupils per classroom.

TNSAC (Expected Level) __________
x 25

TCC (Expected Level) __________

TNSAC (Current Level) __________
x 25

TCC (Current Level) __________

Step 4

Subtract TCC from ADM to derive the excess enrollment (EE).

Expected Level
ADM ____________
TCC -____________
EE ____________+ or -

Current Level
ADM ____________
TCC -____________
EE ____________+ or -

Step 5

Record these data in the appropriate cells on Form #4.

WORKSHEET #4.2

Form #4: Indicator Level-Summary

Directions for Calculating Indicator #2

Classroom Teachers per 1,000 Weighted Pupils (CT) - Defined as total number of classroom teachers in the district divided by the total weighted enrollment, times 1,000.

Step 1

Use the expected enrollment (Expected Level) and current enrollment (Current Level) figures from Form #1. Weight these figures according to the following procedure:

	Expected Level	Current Level
Kdg. - Multiply the enrollment figure by 0.5 if single session or use the enrollment figure unchanged if double session.	________	________
Grades 1-6 and special education elementary-(tuition special education pupils are excluded) - Don't weight these combined figures.	________	________
If vocational-technical pupils are taught within the school district skip this step. If they are taught at a vocational-technical school multiply the vocational-technical pupils enrollment figures by 0.55.	________	________
Grades 7-12 (exclusive of vocational-technical pupils taught outside the district) and special education-secondary (tuition special education pupils are excluded) - Combine these figures and multiply by 1.1.	________	________
Total weighted enrollment (TWE)	________	________

Step 2

Record below the total number of classroom teachers (TNCT) anticipated on staff for this year (Expected Level) and the actual number on staff at the present time (Current Level). The classroom teacher is defined as a member of the professional staff who spends at least half-time in a regular classroom assignment. Count a classroom teacher as 0.5 (50 percent of time), 0.75 (75 percent of time) or 1.0 (100 percent of time).

TNCT (Expected Level) __________

TNCT (Current Level) __________

Step 3

Use the following formula to derive the classroom teachers per 1,000 weighted pupils (CTWP):

(TNCT / TWE) x 1000 = CTWP

Expected Level (______/_____) x 1000 = ____

Current Level (______/_____) x 1000 = ____

Step 4

Record these data on Form #4.

WORKSHEET #4.3

Form #4: Indicator Level-Summary

Directions for Calculating Indicator #3

Mean Cumulative Course Offerings-Grades 7-12 (MCCO) - Defined as total number of courses for grades 7 through 12 of 200 minutes per week.

Step 1

Use the survey form for secondary course offerings provided in the Appendix for recording data for this indicator.

a. This indicator does not include elementary curricula, because it is assumed that a broad secondary school program implies an adequate elementary school program.

b. This indicator is expressed as equivalents of secondary courses meeting for 200 minutes per week throughout the school year.

c. Special versions of the same subject at a given grade level are regarded as different courses.

d. Courses meeting for less than a year or less than 200 minutes per week are counted as fractional equivalents.

e. Courses exceeding 200 minutes per week are counted as a fraction more than one course equivalent.

Step 2

The Expected Level is based on the estimates of anticipated course offerings for the current year at the time the current budget was developed. Record these data on Form #4.

Expected Level __________

Step 3

The Current Level is based on the actual course offerings this year. Record these data on Form #4.

Current Level __________

WORKSHEET #4.4

Form #4: Indicator Level-Summary

Directions for Calculating Indicator #4

Professional Instructional Specialists per 1,000 Weighted Pupils (PISWP) - Defined as total number of instructional specialists in the district divided by the total weighted enrollment, times 1,000.

Step 1

Use the expected enrollment (Expected Level) and current enrollment (Current Level) figures from Form #1. Weight these figures according to the following procedures:

	Expected Level	Current Level
Kdg. - Multiply the enrollment figure by 0.5 if single session or use the enrollment figure unchanged if double session.	________	________
Grades 1-6 and special education-elementary (tuition special education pupils are excluded) - Don't weight these combined figures.	________	________
Vocational-Technical pupils taught outside the school district - Multiply this figure by 0.55.	________	________
Grades 7-12 (exclusive of vocational-technical pupils taught outside the school district) and special education-secondary (tuition special education pupils are excluded) - Combine these figures and multiply by 1.1.	________	________
Total weighted enrollment	________	________

Step 2

The following specialists who supplement or support the professional classroom teacher are included: art (elementary), music (elementary), reading, speech correction, librarian, audio-visual, guidance, health (nurses), psychologists, helping teachers, and others. Count a specialist as 1 only if he spends 100 percent of his time in his field of specialization, otherwise, count him as 0.5 (50 percent of time), 0.75 (75 percent of time), or 0.80 (80 percent of time). Record below the total number of professional instructional specialists (TNPIS) anticipated on staff for this year (Expected Level) and the actual number of staff for this year (Current Level):

TNPIS (Expected Level) __________

TNPIS (Current Level) __________

Step 3

Use the following formula to derive the professional instructional specialists per 1,000 weighted pupils (PISWP) figures:

	(TNPIS / TWE)	x	1000	=	PISWP
Expected Level	_______/_____	x	1000	=	_____
Current Level	_______/_____	x	1000	=	_____

Step 4

Record these data on Form #4.

WORKSHEET #4.5

Form #4: Indicator Level-Summary

Directions for Calculating Indicator #5

Total Dollar Expenditures for Curriculum Materials, Supplies and Library Books per Weighted Pupil (TDEMWP) - Defined as the total dollars allocated in the current budget for curriculum materials, supplies, and library books divided by the total wwighted enrollment.

Step 1

Use the expected enrollment (Expected Level) and current enrollment (Current Level) figures from Form #1. Weight these figures according to the following procedure:

	Expected Level	Current Level
Kdg. - Multiply the enrollment figure by 0.5 if single session or use the enrollment figure unchanged if double session.	________	________
Grades 1-6 and special education (tuition special education pupils are excluded) - Don't weight these combined figures.	________	________
Vocational-technical pupils taught outside the school district - Multiply this figure by 0.63.	________	________
Grades 7-12 (exclusive of vocational-technical pupils taught outside the school district) and special education-secondary (tuition special education pupils are excluded) - Combine these figures and multiply by 1.25.	________	________
Total weighted enrollment (TWE)	________	________

Step 2

This indicator does not include expenditures for text books and teaching materials absolutely essential for classroom instruction. Only use expenditures from Account Numbers 0223, 0224, and 0229. (Only use items from 0229 account if they are supplementary curriculum materials or supplies.) Record below the anticipated expenditures (Expected Level) from these accounts at the time the current budget was constructed and the actual (Current Level) expenditures this year.

Total dollars (TD) expended (Expected Level) __________

Total dollars (TD) expended (Current Level) __________

Step 3

Use the following formula to derive the total dollar expenditures for curriculum materials, supplies, and library books per weighted pupil (TDEMWP):

TD / TWE = TDEMWP

Expected Level _____/_______ = ___________

Current Level _____/_______ = ___________

Step 4

Record these data on Form #4.

WORKSHEET #4.6

Form #4: Indicator Level-Summary

Directions for Calculating Indicator #6

Net Total Expenditures Per Weighted Pupil (NTEWP) - Defined as the net total expenditures divided by the total weighted enrollment.

Step 1

Use the expected enrollment (Expected Level) and current enrollment (Current Level) figures from Form #1. Weight these figures according to the following procedure:

	Expected Level	Current Level
Kdg. - Multiply the enrollment figure by 015 if single session or use the enrollment figure unchanged if double session.	________	________
Grades 1-6 and special education (tuition special education pupils are excluded) - Don't weight these combined figures.	________	________
Vocational-technical pupils taught outside the school district - Multiply this figure by 0.63.	________	________
Grades 7-12 (exclusive of vocational-technical pupils taught outside the school district) and special education-secondary (tuition special education pupils are excluded) - Combine these figures and multiply by 1.25	________	________
Total weighted enrollment (TWE)	________	________

Step 2

Subtract tuition payments to in-state and out-of-state school payments, districts, jointures, or institutions (Account Numbers 1481, 1482, 1483, 1484, 1485, 1486, 1487 and 1488) from the total expenditures (NTE). Record below the anticipated expenditures (Expected Level) at the time the current budget was being developed and the actual (Current Level) expenditures this year.

NTE (Expected Level) __________

NTE (Current Level) __________

Step 3

Use the following formula to derive the net total expenditures per weighted pupil (NTEWP):

	NTE / TWE	=	NTEWP
Expected Level	_______/_______	=	_________
Current Level	_______/_______	=	_________

Step 4

Record these data on Form #4.

WORKSHEET #4.7

Form #4: Indicator Level-Summary

Directions for Calculating Indicator #7

Professional Staff Turnover Rate in Percent Per Year (PSTR) - Defined as number of professional staff separations for a given school year, divided by total professional staff budgeted for that year. Multiply the resulting quotient by 100.

Step 1

Professional staff includes classroom teachers, instructional specialists, and administrators. Record below the anticipated (Expected Level) number of professional staff separations (PSS) at the end of the past school year and the anticipated (Expected Level) total professional staff (TPS) required for this year at time the current budget was constructed:

PSS (Expected Level) ____________

TSS (Expected Level) ____________

Step 2

Record below the actual (Current Level) number of professional staff separations (PSS) at the end of the past school year and the actual (Current Level) total professional staff (TPS) this year:

PSS (Current Level) ____________

TPS (Current Level) ____________

Step 3

Use the following formula to derive the professional staff turnover rate in percent per year (PSTR):

(PSS / TPS) x 100 = P S T R

Expected Level ______/_____ x 100 = _______

Current Level ______/_____ x 100 = _______

Step 4

Record these data on Form #4.

WORKSHEET #4.8

Form #4: Indicator Level-Summary

Directions for Calculating Indicator #8

Percent of Professional Staff with Master Degrees or More (PPSMD) - Defined as the number of professional staff at the beginning of a given school year with at least a masters degree, divided by total professional staff budgeted for that year. (TPS) Multiply the resulting quotient by 100.

Step 1

Professional staff includes classroom teachers, instructional specialists, and administrators. Record below the anticipated (Expected Level) number of professional staff with masters degrees or more (NPSMD) and the anticipated (Expected Level) total professional staff (TPS) required for the current year at the time the current budget was constructed:

NPSMD (Expected Level) __________

TPS (Expected Level) __________

Step 2

Record below the actual (Current Level) number of professional staff with masters degrees or more (NPSMD) and the actual (Current Level) total professional staff (TPS) this year:

NPSMD (Current Level) __________

TPS (Current Level) __________

Step 3

Use the following formula to derive the percent of professional staff with master degrees or more (PPSMD):

	(NPSMD / TPS)	x	100	=	PPSMD
Expected Level	______/_____	x	100	=	PPSMD
Current Level	______/_____	x	100	=	PPSMD

Step 4

Record these data on Form #4.

WORKSHEET #4.9

Form #4: Indicator Level-Summary

Directions for Calculating Indicator #9

Percent Graduating Class Attending Post High School Education (PGCAPHE) - Defined as the number of previous year's graduating class attending some form of post high school education full or part time, divided by the total number in the previous year's graduating class. Multiply the resulting quotient by 100.

Step 1

This indicator includes all types of continuing education. Record below the anticipated (Expected Level) number of last year's graduating class that will attend post high school education (NGCAPHE) and the anticipated (Expected Level) total number of last year's graduating class (TNGC) at the time the current budget was developed:

NGCAPHE (Expected Level) __________

TNGC (Expected Level) __________

Step 2

Record below the actual (Current Level) number of last year's graduating class who attended post high school education (NGCAPHE) and the actual (Current Level) total number of last year's graduating class:

NGCAPHE (Current Level) __________

TNGC (Current Level) __________

Step 3

Use the following formula to derive the percent of the graduating class attending post high school education (PGCAPHE):

(NGCAPHE / TNGC) x 100 = PGCAPHE

Expected Level (________/_______) x 100 = ________

Current Level (________/_______) x 100 = ________

Step 4

Record these data on Form #4.

WORKSHEET #4.10

Form #4: Indicator Level-Summary

Directions for Calculating Indicator #10

Drop-Out Percent for Grades 10-12 (DOP) - Defined as total number of pupils who would have been in 10, 11 and 12 grades during the current school year but are classified on your school records as "withdrew-drop-out" as of the beginning of the current school year, divided by the total enrollment in grades 10, 11 and 12 at the beginning of the current school year. Multiply the resulting quotient by 100.

Step 1

Record below the anticipated (Expected Level) number of drop-outs (NDO) and the anticipated (Expected Level) enrollment for grades 10-12 (TE) for the beginning of this school year at the time the current budget was constructed:

NDO (Expected Level) ____________

TE (Expected Level) ____________

Step 2

Record below the actual (Current Level) number of drop-outs (NDO) and the actual (Current Level) 10-12 enrollment (TE) at the beginning of the current school year:

NDO (Current Level) ___________

TE (Current Level) ___________

Step 3

Use the following formula to calculate the drop-out percent for grades 10-12 (DOP):

	(NDO / TE)	x	100	=	DOP
Expected Level	__________	x	100	=	_______
Current Level	__________	x	100	=	_______

Step 4

Record these data on Form #4.

WORKSHEET #4.11

Form #4: Indicator Level-Summary

Directions for Calculating Indicator #11

Language Achievement-Deviation from Grade Level (LADGL) - Defined as the mean score on the language portions of achievement test administered to grades 3, 6, 9, and 12 or other grades close to these levels, converted to "months behind or ahead or grade level" for each grade, based on test norms for that grade.

Step 1

Record the anticipated (Expected Level) mean language achievement scores in months for grades 3, 6, 9, and 12, or for other preferred grades, at the time the current budget was constructed and convert these scores to months behind or ahead of grade levels by comparing the mean score with the time the instrument was given:

Grade	Name of Instr.	Time Given	Mean Score	Months Deviation (+ or -)
3	________	______	______	______________
6	________	______	______	______________
9	________	______	______	______________
12	________	______	______	______________
	Total months deviation (TMD)			______________

Step 2

Record the actual (Current Level) mean language achievement scores in months for grades 3, 6, 9, and 12, or for other preferred grades, at the end of last school year and convert these scores to months behind or ahead of grade level by comparing the mean score with the time the instrument was given:

Grade	Name of Instr.	Time Given	Mean Score	Months Deviation (+ or -)
3				
6				
9				
12				

Total months deviation (TMD) ____________

Step 3

Use the following formula to derive language achievement deviation from grade level (LADGL):

T M D/ 4 = LADGL

Expected Level _____/ 4 = _____

Current Level _____/ 4 = _____

Step 4

Record these data on Form #4.

WORKSHEET #4.12

Form #4: Indicator Level-Summary

Directions for Calculating Indicator #12

Mathematics Achievement-Deviation from Grade Level (MADGL) - Defined as the mean score on the mathematics portions of achievement test administered to grades 3, 6, 9, and 12 or other grades close to these levels, converted to "months behind or ahead or grade level" for each grade, based on test norms for that grade.

Step 1

Record the anticipated (Expected Level) mean mathematics achievement scores in months of grades 3, 6, 9, and 12, or other preferred grades, at the time the current budget was constructed and convert these scores to months behind or ahead of grade level by comparing the mean score with the time the instrument was given:

Grade	Name of Instr.	Time Given	Mean Score	Months Deviation (+ or -)
3	________	________	______	______________
6	________	________	______	______________
9	________	________	______	______________
12	________	________	______	______________
	Total months deviation (TMD)			______________

Step 2

Record the actual (Current Level) mean mathematics achievement scores in months of grades 3, 6, 9, and 12, or other preferred grades, at the end of last school year and convert these scores to months behind or ahead of grade level by comparing the mean score with the time the instrument was given:

Grade	Name of Instr.	Time Given	Mean Score	Months Deviation (+ or -)
3	________	______	______	_______________
6	________	______	______	_______________
9	________	______	______	_______________
12	________	______	______	_______________
	Total months deviation (TMD)			_______________

Step 3

Use the following formula to derive mathematics achievement deviation from grade level (MADGL):

T M D/ 4 = MADGL

Expected Level ______/ 4 = ______

Current Level ______/ 4 = ______

Step 4

Record these data on Form #4.

	ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	INDICATOR LEVEL - SUMMARY	

Educational Unit:

Indicator	Expected Level	Current Level	Variation	Difference(±)	Comment

Form #4

Form #5: Base Case - Program and Project Summary and Form #5.1: Base Case - Program Summary

1. Fill in the name of your school district on both of these forms.

2. Enter the total dollars for each program and project from Form #3 in the Current Year Column on Form #5.

3. Enter the total dollars for each program from Form #3.1 in the Current Year Column on Form #5.1.

4. Calculate the Salary (S), Non-Salary (NS), Capital Outlay (CO), and Debt Service (DS) for each program and project on Form #5 for the Current Year (CY). Worksheet #5.1 has been designed to help you perform this activity. Enter the total dollars for each program and project from Form #3 in the Current Year Column opposite T (Total).

5. Project the S, NS, CO, DS, and T figures for each program and project from Y-1 through Y-5 according to the rules outlined below and record the data on Worksheet #5.1:

    a. Policy and Executive

        (1) Salary - Multiply the Current Year's (CY) salary (S) figure by a compound inflation rate for Y-1 through Y-5 (see Table 2). Before you choose a compound inflation rate, examine the salary (S) increases in your school district over the past three to five years. Record the rate in the space below the program and opposite S.

        (2) Non-Salary - Multiply the CY non-salary (NS) figure by a compound inflation rate for Y-1 through Y-5 (see Table 2). Before you choose a compound inflation rate examine the non-salary (NS) increases in your school district over the past three to five years. Record the rate in the space below the program and opposite NS.

        (3) Capital Outlay - Don't project the Capital Outlay (CO) beyond the first year encountered, unless you have established a specific schedule of replacement.

Table 2

Compound Inflation Rates

Fiscal Year Rate Per Year	Y-1	Y-2	Y-3	Y-4	Y-5
1.0 %	1.0100	1.0201	1.0303	1.0406	1.0510
1.5	1.0150	1.0302	1.0457	1.0614	1.0773
2.0	1.0200	1.0404	1.0612	1.0824	1.1041
2.5	1.0250	1.0506	1.0769	1.1038	1.1314
3.0	1.0300	1.0609	1.0927	1.1255	1.1593
3.5	1.0350	1.0712	1.1087	1.1475	1.1877
4.0	1.0400	1.0816	1.1249	1.1699	1.2166
4.5	1.0450	1.0920	1.1412	1.1925	1.2462
5.0	1.0500	1.1025	1.1576	1.2155	1.2763
5.5	1.0550	1.1130	1.1742	1.2388	1.3070
6.0	1.0600	1.1236	1.1910	1.2625	1.3382
6.5	1.0650	1.1342	1.2079	1.2865	1.3701
7.0	1.0700	1.1449	1.2250	1.3108	1.4026
7.5	1.0750	1.1556	1.2423	1.3355	1.4356
8.0	1.0800	1.1664	1.2597	1.3605	1.4693
8.5	1.0850	1.1772	1.2773	1.3858	1.5036
9.0	1.0900	1.1881	1.2950	1.4116	1.5386
9.5	1.0950	1.1990	1.3129	1.4377	1.5742
10.0	1.1000	1.2100	1.3310	1.4641	1.6105
11.0	1.1100	1.2321	1.3676	1.5180	1.6850
12.0	1.1200	1.2544	1.4049	1.5735	1.7623
13.0	1.1300	1.2769	1.4429	1.6305	1.8424
14.0	1.1400	1.2996	1.4815	1.6890	1.9254
15.0	1.1500	1.3225	1.5209	1.7490	2.0114

(4) Debt Service - Project debt service (DS) on the basis of the known schedule for existing plants. If this information is not available project the CY figure as a constant figure for Y-1 through Y-5. Indicate the basis for projection in the space below the program and opposite DS.

b. Comprehensive Plan, Information and Liaison, Community Services, Coordinative Support Services, Early Childhood Instruction, Elementary Instruction, Secondary Instruction, Vocational-Technical Instruction, Special Instruction, Continuing Instruction, Instructional Support Services, Nursing, Medical, General Services, Food Services and Business Support Services.

(1) Salary -

(a) Multiply the Current Year's (CY) salary (S) figure by a compound inflation rate for Y-1 through Y-5 (see Table 2). Before you choose a compound inflation rate examine the salary (S) increases in your school district over the past t three to five years. Record the rate in the space below the program and opposite S.

(b) If the vocational-technical pupils are trained outside the school district the salary costs will be 1/2 that of the regular secondary pupil, if not, the costs will be the same. Record this information in the space below the program.

(c) If the special pupils are trained outside the school salary cost is zero, if not, the cost is the same as the cost for a regular elementary or secondary pupil. Record this information in the space below the program.

(d) The salary cost for the Medical and Dental programs is zero unless a full time doctor or dentist is hired by the district. Record this information in the space below the program.

(2) Non-Salary -

(a) Multiply the CY non-salary (NS) figures by a compound inflation rate for Y-1 through Y-5 (see Table 2). Before you choose a compound inflation rate examine the non-salary (NS) increases in your school district over the past three to five years. Record the rate in the space below the program and opposite NS.

(b) If the vocational-technical pupils are trained outside the school district the non-salary costs will be 1/2 that of the regular secondary pupil plus the tuition costs paid to the area vocational-technical school district, if not, the costs will be the same. Record this information in the space below the program.

(c) If the special pupils are trained outside the school district the non-salary cost is the tuition cost, if not, the cost is the same as the cost for a regular elementary or secondary pupil. Record this information in the space below program.

(3) Capital Outlay - Don't project the capital outlay (CO) beyond the first year encountered, unless you have established a specific schedule of replacement.

(4) Debt Service - Project debt service (DS) on the basis of the known schedule. If this information is not available project the CY figure as a constant figure for Y-1 through Y-5. Record the basis for projection in the space below the program and opposite DS.

c. Pupil Transportation

(1) Salary - Multiply the Current Year's (CY) salary (S) figure by a compound inflation rate for Y-1 through Y-5 (see Table 2). Before you choose a compound inflation rate examine the salary (S) increases in your school district over the past three to five years. Record the rate in the space below the program and opposite S.

(2) Non-Salary - Multiply the CY non-salary (NS) figure by a compound inflation rate for Y-1 through Y-5 (see Table 2). Before you choose a compound inflation rate examine the non-salary (NS) increases in your school district over the past three to five years. You may hold the CY figure constant for Y-1 through Y-5 for insurance expenditures if you wish. Record the rate and basis for insurance expenditure projections in the space below the program and opposite NS.

(3) Capital Outlay - Don't project the capital outlay (CO) beyond the first year encountered, unless you have established a specific schedule of replacement.

(4) Debt Service - Project debt service (DS) on the basis of the known schedule for existing plants. If this information is not available project the CY figure as a constant figure for Y-1 through Y-5. Record the basis for projection in the space below the program and opposite DS.

d. Facilities

(1) Salary - Multiply the Current Year (CY) salary (S) figure by a compound inflation rate for Y-1 through Y-5 (see Table 2). inflation rate examine the salary (S) increases in your school district over the past three to five years. Record the rate in the space below the program and opposite S.

(2) Non-Salary - Multiply the CY non-salary (NS) figure by a compound inflation rate for Y-1 through Y-5 (see Table 2). Before you choose a compound inflation rate examine the non-salary (NS) increases in your school district over the past three to five years. You may hold your telephone expenditures constant for Y-1 through Y-5 if you wish. Record the rate and basis for telephone expenditure projections in the space below the program and opposite NS.

(3) Capital Outlay - Don't project the capital outlay (CO) beyond the first year encountered, unless you have established a specific schedule of replacement.

(4) Debt Service - Project debt service (DS) on the basis of the known schedule for existing plants. If this information is not available project the CY figure as a constant figure for Y-1 through Y-5. Record the basis for projection in the space below the program and opposite DS.

e. Fixed Charges

(1) Salary - Include figures for the following expenditures: school district's contribution to employees' retirement and school district's share of social security. Multiply the Current Year's salary (S) figure by a compound inflation rate for Y-1 through Y-5 (see Table 2). Before you choose a compound inflation rate examine the salary (S) increases over the past three to five years. Record this rate in the space below program and opposite S.

(2) Non-Salary - Hold the CY figures constant for Y-1 through Y-5.

(3) Capital Outlay - Don't project the capital outlay beyond the first year encountered, unless you have established a specific schedule of replacement.

(4) Debt Service - Project debt service on the basis of the known schedule for existing plants. If this information is not available project the CY figure as a constant figure for Y-1 through Y-5. Record the basis for projection in the space below program and opposite DS.

f. Projects (Capital and Operations)

(1) If this is the first time you have used the PPBS Procedure Manual skip to Section 9. You will not deal with projects until later in the PPBS Procedure. However, if you used the PPBS Procedure last year to develop a five-year plan continue to the end of the directions.

(2) All projects must be named.

(3) Costs for a given project must not be projected beyond the life of the project.

(4) If the project is on a fixed budget basis (e.g., ESEA Title III) use the actual costs fixed for each of the life of the project.

(5) Salary - Multiply the Current Year's (CY) salary (S) figure by a compound inflation Before you choose a compound inflation rate examine the rate for Y-1 through Y-5 (see Table 2) salary (S) increases in your school district over the past three to five years. Record this rate in the space below the project name and opposite S.

(6) Non-Salary - Multiply the CY non-salary (NS) figures by a compound inflation rate for Y-1 through Y-5 (see Table 2). Before you choose a compound inflation rate examine the non-salary (NS) increases in your school district over the past three to five years. Record this rate in the space below the project name and opposite NS.

(7) Capital Outlay - Don't project the capital outlay (CO) beyond the first year encountered, unless you have established a specific schedule of replacement.

(8) Debt Service - Project the debt service (DS) on the basis of the known schedule. If this information is not available project the CY figure as a constant figure for Y-1 through Y-5. Record the basis for projection in the space below program and opposite DS.

6. Transfer the total for each year by program and project from Worksheet #5.2 to the appropriate cell on Form #5. Don't add in the capital improvement project costs when you total the years from CY through Y-5. Capital improvement project costs for CY through Y-5 are reflected in the Final Base Case (Form #12).

7. Calculate and project the Salary (S), Non-Salary (NS), Capital Outlay (CO), and Debt Service (DS) for each program from CY through Y-5 by merging the project costs with the program costs. Use a second copy of Worksheet #5.1 to perform this activity. Start by recording the total dollars for each program from Form #3.1 in the Current Year Column opposite T (total). Merge the S, NS, Co, and DS costs for each project with the programs under which the project should be placed. The total of S, NS, CO, and DS for each program should equal the total for each program taken from Form #3.1. Continue to merge for Y-1 through Y-5.

8. Transfer the total for each year from Y-1 through Y-5 by program from the second copy of Worksheet #5.1 to the appropriate cell on Form #5.1, capital improvement project costs will be reflected in the grand totals on this form.

9. The purpose of the calculations for the Base Case exhibited on Form #5 is to show the effects of inflation upon expenditures over the next five years for each program and project. Increases or decreases in pupil enrollments and capital improvement costs have been ignored in these projections.

10. Project expenditures are merged into program expenditures on Form #5.1. The grand totals on this form include the CY through Y-5 capital improvement project costs. If you haven't used the PPBS Procedure before you will not develop either capital improvement or operations projects until later in the procedure; therefore, Form #5 and Form #5.1 totals will be exactly the same.

WORKSHEET #5.1

Forms #5 and #5.1 - Base Case - Program and Project Summary

Program	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coordinative Program Area Policy & Executive	S						
	NS						
	CO						
	DS						
	T						
Comprehensive Planning	S						
	NS						
	CO						
	DS						
	T						
Information & Liaison	S						
	NS						
	CO						
	DS						
	T						
Community Services	S						
	NS						
	CO						
	DS						
	T						
Coordinative Support Ser.	S						
	NS						
	CO						
	DS						
	T						
Instructional Program Area Early Childhood Instruction	S						
	NS						
	CO						
	DS						
	T						
Elementary Instruction	S						
	NS						
	CO						
	DS						
	T						
Secondary Instruction	S						
	NS						
	CO						
	DS						
	T						

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Program	Cat.	Fiscal Year Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Voc.-Tech. Instruction	S						
	NS						
	CO						
	DS						
	T						
Special Instruction	S						
	NS						
	CO						
	DS						
	T						
Continuing Instruction	S						
	NS						
	CO						
	DS						
	T						
Instructional Supp. Ser.	S						
	NS						
	CO						
	DS						
	T						
Health Program Area Nursing	S						
	NS						
	CO						
	DS						
	T						
Medical	S						
	NS						
	CO						
	DS						
	T						
Dental	S						
	NS						
	CO						
	DS						
	T						
Psychological	S						
	NS						
	CO						
	DS						
	T						
Health Support Services	S						
	NS						
	CO						
	DS						
	T						

Program	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Business Program Area General Services	S						
	NS						
	CO						
	DS						
	T						
Pupil Transportation	S						
	NS						
	CO						
	DS						
	T						
Food Services	S						
	NS						
	CO						
	DS						
	T						
Facilities	S						
	NS						
	CO						
	DS						
	T						
Fixed Charges	S						
	NS						
	CO						
	DS						
	T						
Business Support Services	S						
	NS						
	CO						
	DS						
	T						
Total							

Worksheet #5.1

Page 3 of 4

Project	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
	S						
	NS						
	CO						
	DS						
	T						
	S						
	NS						
	CO						
	DS						
	T						
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	ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	BASE CASE - PROGRAM AND PROJECT SUMMARY	

Educational Unit:

Fiscal Year Program	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coordinative Program Area Policy & Executive						
Comprehensive Planning						
Information & Liaison						
Community Services						
Coordinative Support Ser.						
Annual Cost						
Instructional Program Area Early Childhood Instr.						
Elementary Instruction						
Secondary Instruction						
Voc.-Tech. Instruction						
Special Instruction						
Continuing Instruction						
Instr. Support Services						
Annual Cost						
Health Program Area Nursing						
Medical						
Dental						
Psychological						
Health Support Services						
Annual Cost						
Business Program Area General Services						
Pupil Transportation						
Food Services						
Facilities						
Fixed Charges						
Business Support Ser.						
Annual Cost						
Program Total Annual Cost						

Form #5

Page 1 of 2

	ANALYSIS AND SUMMARIZATION- FINAL BASE CASE	BASE CASE - PROGRAM AND PROJECT SUMMARY	

Educational Unit:

Fiscal Year / Project	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Project Total Annual Cost						
Program and Project Total Annual Cost						
Capital Improvement Project(s) Total Annual Cost						
Adjusted Program & Project Total Annual Cost						

ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	BASE CASE - PROGRAM SUMMARY

Educational Unit:

Fiscal Year Program	Current Year	Y_1 ___	Y_2 ___	Y_3 ___	Y_4 ___	Y_5 ___
Coordinative Program Area Policy & Executive						
Comprehensive Planning						
Information & Liaison						
Community Services						
Coordinative Support Ser.						
Annual Cost						
Instructional Program Area Early Childhood Instr.						
Elementary Instruction						
Secondary Instruction						
Voc.-Tech. Instruction						
Special Instruction						
Continuing Instruction						
Instr. Support Services						
Annual Cost						
Health Program Area						
Nursing						
Medical						
Dental						
Psychological						
Health Support Services						
Annual Cost						
Business Program Area General Services						
Pupil Transportation						
Food Services						
Facilities						
Fixed Cahrges						
Business Support Ser.						
Annual Cost						
Total Annual Cost						

Form #5.1

Form #6: Calculations and Projections of Indicators for Base Cases - Detail and Form #6.1: Calculations and Projections of Indicators for Base Cases - Summary

1. Forms #6 and #6.1 have been provided for you to record the indicator levels. You can plot a single indicator on Form #6 or plot all the indicators on Form #6.1. A finer scale can be used for Form #6 than for Form #6.1. Form #6 is useful in studying a single indicator. Form #6.1 enables you to see the gross trends of all the indicators at one glance.

2. The indicators must be projected from the Current Year (CY) through Y-5 for the Base Case (BC), Adjusted Base Case (ABC) and Final Base Case (FBC). Each graph must show these three projections. The CY level has already been calculated and recorded on Form #4. The Y-1 through Y-5 projections are derived according to the steps outlined on the worksheets listed below - record the levels for each indicator on Worksheet #6.13:

    a. Indicator # 1 - Worksheet #6.1
    b. Indicator # 2 - Worksheet #6.2
    c. Indicator # 3 - Worksheet #6.3
    d. Indicator # 4 - Worksheet #6.4
    e. Indicator # 5 - Worksheet #6.5
    f. Indicator # 6 - Worksheet #6.6
    g. Indicator # 7 - Worksheet #6.7
    h. Indicator # 8 - Worksheet #6.8
    i. Indicator # 9 - Worksheet #6.9
    j. Indicator #10 - Worksheet #6.10
    k. Indicator #11 - Worksheet #6.11
    l. Indicator #12 - Worksheet #6.12

3. Plot the indicator levels for the Base Case, Adjusted Base Case, and Final Base on Forms #6 and #6.1.

WORKSHEET #6.1

Forms #6 and #6.1: Calculations and Projections of Indicators for Base Case - Detail and Summary

Directions for Calculating Indicator #1

Excess Enrollment (EE) - Defined as total average daily membership in the district minus the total classroom capacity.

Note:

1. Base Case and Adjusted Base Case - The average daily membership (ADM) will increase or decrease in accordance with the enrollment projections shown on Form #2. The classroom figure used to calculate CY level (Worksheet #4.1) remains constant for Y-1 through Y-5.
2. Final Base Case - The ADM values will be the same as those used for Base Case and Adjusted Base Case. The total classroom capacity will be increased because of capital improvement project(s) shown on Form #9.

Step 1

Record below the ADM from Form #2:

CY __________ Y-3 __________
Y-1__________ Y-4 __________
Y-2__________ Y-5 __________

Step 2

Record below the total number of standard academic classroom (TNSAC) figure (Current Level) from Worksheet #4.1:

TNSAC __________

Step 3

Record below the total number of standard academic classrooms added (ACA) because of capital improvement project(s) and add these to the total number of classrooms available the previous year.

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
CY - TNSAC	___	___				
Y-1 ACA		+___				
Y-1 TNSAC		___	___			
Y-2 ACA			+___			
Y-2 TNSAC			___	___		
Y-3 ACA				+___		
Y-3 TNSAC				___	___	
Y-4 ACA					+___	
Y-4 TNSAC					___	___
Y-5 ACA						+___
Y-5 TNSAC						___

Step 4

Calculate the total classroom capacity (TCC) by multiplying the TNSAC by 25 pupils per classroom.

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
TNSAC	___	___	___	___	___	___
	x25	x25	x25	x25	x25	x25
TCC	___	___	___	___	___	___

Step 5

Subtract TCC from ADM for CY through Y-5 to derive the excess enrollment (EE) for each year.

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
ADM	___	___	___	___	___	___
TCC	-___	-___	-___	-___	-___	-___
EE (+ or -)	___	___	___	___	___	___

Step 6

Record these data on Worksheet #6.13.

WORKSHEET #6.2

Forms #6 and #6.1: Calculations and Projections of Indicators for Base Case - Detail and Summary

Directions for Calculating Indicator #2

Classroom Teachers per 1,000 Weighted Pupils (CTWP)- Defined as total number of classroom teachers in the district divided by the total weighted enrollment, times 100.

Note:

1. Base Case - The total number of classroom teachers remains constant from CY through Y-5. The total weighted enrollment will increase or decrease in accordance with the enrollment projections shown on Form #2.
2. Adjusted Base Case and Final Base Case - The total number of classroom teachers will increase or decrease as shown on Worksheet #7.1. The weighted enrollment figures are the same as those used for Base Case.
3. The classroom teacher is defined as a member of the professional staff who spends at least half-time in a regular classroom assignment. Count a classroom teacher as 0.5 (50 percent of time), 0.75 (75 percent of time), or 1.0 (100 percent of time).

Step 1

Record below the total weighted enrollment-staff (TWE-S) from Form #2:

CY ____________ Y-3 ____________
Y-1 ____________ Y-4 ____________
Y-2 ____________ Y-5 ____________

Step 2

Record the total number of classroom teachers (Current Level) from Worksheet #4.2:

Total number of classroom teachers (TNCT) __________

Step 3

Record below the total number of clasroom teachers (TNCT) from Worksheet #7.1:

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
TNCT	___	___	___	___	___	___

Step 4

Use the following formula to derive the classroom teachers per 1000 weighted pupils (CTWP) for each year:

(TNCT / TWE-S) x 1000 = C T W P

CY (______/______) x 1000 = __________

Y-1 (______/______) x 1000 = __________

Y-2 (______/______) x 1000 = __________

Y-3 (______/______) x 1000 = __________

Y-4 (______/______) x 1000 = __________

Y-5 (______/______) x 1000 = __________

Step 5

Record these data on Worksheet #6.13.

WORKSHEET #6.3

Forms #6 and #6.1: Calculations and Projections of Indicators for Base Case - Detail and Summary

Directions for Calculating Indicator #3

Mean Cumulative Course Offerings - Grades 7-12 (MCCO) - Defined as total number of courses for grades 7 through 12 of 200 minutes per week.

Note:

1. Review the procedure outlined in the instructions for Worksheet #4.3. The level of this indicator will remain constant from CY through Y-5 in the absence of specific information concerning additions or changes to the secondary curriculum.

Step 1

Record below the Current Level mean cummulative course offerings (MCCO) for grades 7-12 from Worksheet #4.3:

MCCO __________

Step 2

Record below any changes in the MCCO for each year:

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
CY - MCCO	___	___				
Y-1 Changes		___				
Y-1 MCCO		___	___			
Y-2 Changes			___			
Y-2 MCCO			___	___		
Y-3 Changes				___		
Y-3 MCCO				___	___	
Y-4 Changes					___	
Y-4 MCCO					___	___
Y-5 Changes						___
Y-5 MCCO						___

Step 3

Record these data on Worksheet #6.13.

WORKSHEET #6.4

Form #6 and #6.1: Calculations and Projections of Indicators for Base Case - Detail and Summary

Directions for Calculating Indicator #4

Professional Instructional Specialists per 1000 Weighted Pupils (PISWP) - Defined as total number of instructional specialists in the district divided by the total weighted enrollment, times 1000.

Note:

1. Base Case and Adjusted Base Case - The total number of instructional specialists figure employed to calculate the level CY remains constant for Y-1 through Y-5 unless a decrease in enrollment dictates a decrease in instructional specialists. The same weighted enrollment figures used in Indicator #2 are also used here.

2. Final Base Case - If the capital improvement project(s) shown on Form #9 require an increase in professional instructional specialists the levels calculated above must be recomputed for the Final Base Case. The weighted enrollment figures are the same.

3. The following specialists who supplement or support the professional classroom teacher are included: art (elementary), music (elementary), reading, speech correction, librarian, audio-visual, guidance, health (nurses), psychologists, helping teachers, and others. Count a specialist as 1 only if he spends 100 percent of his time in his field of specialization, otherwise, count him as 0.5 (50 percent of time), 0.75 (75 percent of time), or 0.8 (80 percent of time).

Step 1

Record below the total weighted enrollment statt (TWE-S) from Form #2:

CY __________ Y-3 __________
Y-1 __________ Y-4 __________
Y-2 __________ Y-5 __________

Step 2

Record below the TPIS or total number of professional instructional specialists (Current Level) from Worksheet #4.4:

TPIS______________

Step 3

Record below the TNPIS from Worksheet #7.1; add to this number the professional instructional specialists added (PISA) because of capital improvement project(s) shown on Form #9:

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
TNPIS	___	___	___	___	___	___
PISA	+___	+___	+___	+___	+___	+___
Total	___	___	___	___	___	___

Step 4

Use the following formula to derive the professional instructional specialists per 1,000 weighted pupils (PISWP) for each year:

(TNPIS/ TWE-S) x 1000 = PISWP

CY (______/______) x 1000 = ______

Y-1 (______/______) x 1000 = ______

Y-2 (______/______) x 1000 = ______

Y-3 (______/______) x 1000 = ______

Y-4 (______/______) x 1000 = ______

Y-5 (______/______) x 1000 = ______

Step 5

Record these data on Worksheet #6.13.

WORKSHEET #6.5

Form #6 and #6.1: Calculations and Projections of Indicators for Base Case - Detail and Summary

Directions for Calculating Indicator #5

Total Dollar Expenditures for Curriculum Materials, Supplies and Library Books Per Weighted Pupil (TDEMWP) Defined as the total dollars allocated in the current budget for curriculum materials, supplies, and library books divided by the total weighted enrollment.

Note:

1. Base Case - Use the total dollar (TD) figure (Current Level) employed in calculating the CY level on Worksheet #4.5. Increase this figure each year from Y-1 through Y-5 by a compound inflation rate (see Table 2). Use the total weighted enrollment figure (TWE-F) shown on Form #2. Divide the TD figure by the TWE-F figure for each year.

2. Adjusted Base Case - Use the TDEMPWP for CY. Increase this level each year from Y-1 through Y-5 by a compound inflation rate (see Table 2). This calculation will give you the level for each year from Y-1 through Y-5. Use the same weighted enrollment data employed in calculating the Base Case.

3. Final Base Case - If the capital improvement project(s) shown on Form #9 require an increase in these materials the increased cost must be added to Adjusted Base Case Instructional Support Services NS figures, for each year the capital improvement project(s) are operating to Y-5. A TDEMDWP must be calculated for each year the capital improvement is open to Y-5. This can be done by taking the increase and adding it to the TD figures used in calculating the Base Case levels and dividing by the TWE-F for each year.

4. This indicator does not include expenditures for text books and teaching materials absolutely essential for classroom instruction. Only use expenditures from Account Numbers 0223, 0224, and 0229. (Only use items from 0229 account if they are supplementary curriculum materials or supplies.)

Step 1

Record below the total weighted enrollment-finance (TWE-F) from

Form #2:

CY ____________ Y-3 ____________
Y-1 ____________ Y-4 ____________
Y-2 ____________ Y-5 ____________

Step 2

Record below the total dollars (TD) expended (Current Level) from Worksheet #4.5 and increase by a given compound inflation rate (CIR):

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
CY - TD	___	___	___	___	___	___
CIR		x___	x___	x___	x___	x___
TD	___	___	___	___	___	___

Step 3

Skip this step if you are doing the Base Case, Adjusted Base Case or if no capital improvement project(s) have been added. However, if capital improvement project(s) are added (see Form #9), show the increased cost (IC) to the above total dollar (TD) figures.

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
TD	___	___	___	___	___	___
IC	+___	+___	+___	+___	+___	+___
Total	___	___	___	___	___	___

Step 4

Use the following formula to dervie the total dollar expenditures for curriculum materials, supplies, and library books per weighted pupil (TDEMWP) for each year:

TD/ TWE = TDEMWP

CY __________/__________ = __________
Y-1 __________/__________ = __________
Y-2 __________/__________ = __________
Y-3 __________/__________ = __________
Y-4 __________/__________ = __________
Y-5 __________/__________ = __________

Step 5

Record these data on Worksheet #6.13.

3

WORKSHEET #6.6

Form #6 and #6.1: Calculations and Projections of Indicators for Base Case - Detail and Summary

Directions for Calculating Indicator #6

Net Total Expenditures Per Weighted Pupil (NTEWP) - Defined as the net total expenditures divided by the total weighted enrollment.

Note:

1. Base Case - Use the data shown on Worksheet #5.1 and the enrollment figures on Form #2.
2. Adjusted Base Case - Use the data from Worksheet #7.4 and the enrollment figures on Form #2.
3. Final Base Case - Use the data from Worksheet #12.1 and the enrollment figures from Form #2.
4. Subtract tuition payments to in-state and out-of-state school systems, districts, jointures, or institutions (Account Numbers 1481, 1482, 1483, 1484, 1485, 1486, 1487 and 1488) from the total expenditures figure shown on Worksheet #5.1, Worksheet #7.1, or Worksheet #11.1 to determine the net total expenditures (NTE).

Step 1

Record below the total weighted enrollment-finance (TWE-F) from Form #2:

CY ______ Y-3 ______

Y-1 ______ Y-4 ______

Y-2 ______ Y-5 ______

Step 2

Record below the net total expenditures (NTE) from Worksheet #5.1 (Base Case), Worksheet #7.4 (Adjusted Base Case), or Worksheet #10.1 (Final Base Case) for each year:

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
NTE	___	___	___	___	___	___

Step 3

Use the following formula to derive the net total expenditures per weighted pupil (NTEWP):

NTE/ TWE-F = N T E W P

CY ______/______ = __________
Y-1 ______/______ = __________
Y-2 ______/______ = __________
Y-3 ______/______ = __________
Y-4 ______/______ = __________
Y-5 ______/______ = __________

Step 4

Record these data on Worksheet #6.13.

WORKSHEET #6.7

Form #6 and #6.1: Calculations and Projections of Indicators for Base Case - Detail and Summary

Directions for Calculating Indicator #7

Professional Staff Turnover Rate in Percent Per Year (PSTR) - Defined as number of professional staff spearations for a given school year, divided by total professional staff budgeted for that year. Multiply the resulting quotient by 100.

Note:

1. Professional staff includes classroom teachers, instructional specialists, and administrators.
2. Hold the Current Level constant from Worksheet #4.7 for Y-1 through Y-5 for all base cases.

Step 1

Record below the Current Level professional staff turnover rate (PSTR) from Worksheet #4.7:

PSTR __________

Step 2

List the PSTR for CY through Y-5 below and record these figures on Worksheet #6.13:

CY __________ Y-3 __________
Y-1 __________ Y-4 __________
Y-2 __________ Y-5 __________

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WORKSHEET #6.8

Form #6 and #6.1: Calculations and Projections of Indicators for Base Case - Detail and Summary

Directions for Calculating Indicator #8

Percent of Professional Staff with Master Degree or More (PPSMD) - Defined as the number of professional staff at the beginning of a given school year with at least a masters degree, divided by total professional staff budgeted for that year. Multiply the resulting quotient by 100.

Note:

1. Professional staff includes classroom teachers, instructional specialists, and administrators.
2. Hold the Current Level constant from Worksheet #4.8 for Y-1 through Y-5 for all base cases.

Step 1

Record below the Current Level percent of professional staff with masters degree or more (PPSMD) from Worksheet #4.8:

PPSMD ______________

Step 2

List the PPSMD for CY through Y-5 below and record these figures on Worksheet #6.13:

CY __________ Y-3 __________
Y-1 __________ Y-4 __________
Y-2 __________ Y-5 __________

WORKSHEET #6.9

Form #6 and #6.1: Calculations and Projections of Indicators for Base Case - Detail and Summary

Directions for Calculating Indicator #9

Percent Graduating Class Attending Post High School Education (PGCAPHE) - Defined as the number of previous year's graduating class attending some form of post high school education full or part time divided by total number in the previous year's graduating class. Multiply the resulting quotient by 100.

Note:

1. This indicator includes all types of continuing education.
2. Hold the Current Level constant from Worksheet #4.9 for Y-1 through Y-5 for all base cases.

Step 1

Record below the Current Level percent of graduating class attending post high school education (PGCAPHE) from Worksheet #4.9:

PGCAPHE ______________

Step 2

List the PGCAPHE for CY through Y-5 below and record these figures on Worksheet #6.13:

CY __________ Y-3 __________
Y-1 __________ Y-4 __________
Y-2 __________ Y-5 __________

WORKSHEET #6.10

Form #6 and #6.1: Calculations and Projections of Indicators for Base Case - Detail and Summary

Directions for Calculating Indicator #10

Drop-Out Percent for Grades 10-12 (DOP) - Defined as total number of pupils who would have been in 10, 11 and 12 grades during the current school year but are classified on your school records as "withdrew-drop-out" as of the beginning of the current school year, divided by the total enrollment in grades 10, 11 and 12 at the beginning of the current school year. Multiply the resulting quotient by 100.

Note:

1. Hold the Current Level constant from Worksheet #4.10 for Y-1 through Y-5 for all base cases.

Step 1

Record below the Current Level drop-out percent for grades 10-12 (DOP) from Worksheet #4.10:

DOP ______________

Step 2

List the DOP for CY through Y-5 below and record these figures on Worksheet #6.13:

CY ____________ Y-3 ____________
Y-1 ____________ Y-4 ____________
Y-2 ____________ Y-5 ____________

WORKSHEET #6.11

Form #6 and #6.1: Calculations and Projections of Indicators for Base Case - Detail and Summary

Directions for Calculating Indicator #11

Language Achievement - Deviation from Grade Level (LADGL) - Defined as the mean score on the language portions of achievement test administered to grades 3, 6, 9, and 12, or other grades close to these levels, converted to "months behind or ahead of grade level" for each grade, based on test norms for that grade.

Note:

1. Base Case and Adjusted Base Case - The Current Level shown is held constant to Y-5.
2. Final Base Case - The Current Level shown on Worksheet #4.11 is held constant to Y-5 unless it is believed that one or more capital improvements will have some impact on this indicator. In this case the indicator levels must be altered to reflect this influence.

Step 1

Record the Current Level total months deviation (TMD) for language achievement scores for grades 3, 6, 9, and 12 or for other preferred grades form Worksheet #4.11:

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
TMD	___	___	___	___	___	___

Step 2

Skip this step unless you are calculating Final Base Case Indicator levels. If capital improvement project(s) will have some impact on this indicator record the change below: on this indicator record the change below:

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
TMD	___	___	___	___	___	___
Changes	___	___	___	___	___	___
Adjusted TMD	___	___	___	___	___	___

Step 3

Record these data on Worksheet #6.13.

WORKSHEET #6.12

Form #6 and #6.1: Calculations and Projections of Indicators for Base Case - Detail and Summary

Directions for Calculating Indicator #12

Mathematics Achievement - Deviation from Grade Level (MADGL) - Defined as the mean score on the mathematics portions of achievement test administered to grades 3, 6, 9, and 12 or other grade close to these levels, converted to "months behind or ahead or grade level" for each grade, based on test norms for that grade.

Note:

1. Base Case and Adjusted Base Case - The Current Level shown on Worksheet #4.12 is held constant to Y-5.
2. Final Base Case - The Current Level shown on Worksheet #4.12 is held constant to Y-5 unless it is believed that one or more capital improvement projects will have some impact on this indicator. In this case the indicator levels must be altered to reflect this influence.

Step 1

Record the Current Level total months deviation (TMD) for mathematics achievement scores for grades 3, 6, 9, and 12 or for other preferred grades from Worksheet #4.12:

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
TMD	___	___	___	___	___	___

Step 2

Skip this step unless you are calculating Final Base Case Indicator Levels. If capital improvement project(s) will have some impact on this indicator record the change below:

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
TMD	___	___	___	___	___	___
Changes	___	___	___	___	___	___
Adjusted TMD	___	___	___	___	___	___

Step 3

Record these data on Worksheet #6.13.

WORKSHEET #6.13

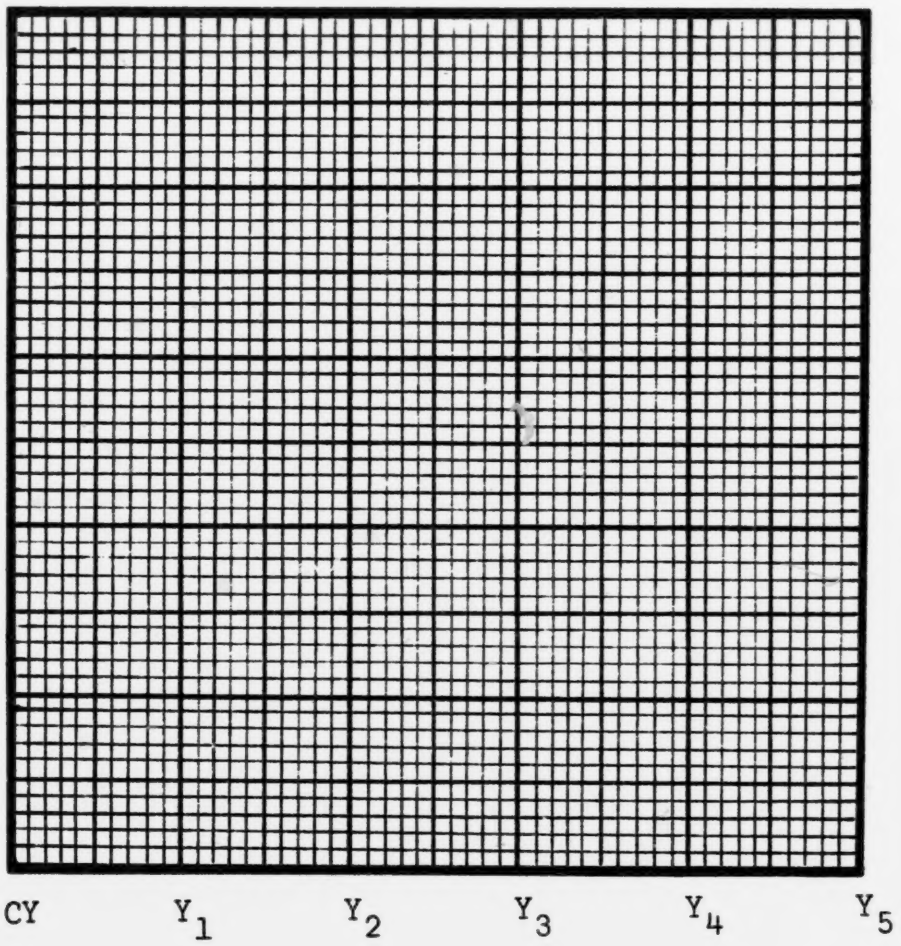
Forms #6 and #6.1 - Calculations and Projections on Indicators for Base Cases - Detail and Summary

Indicator	Fiscal Year					
	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5

	ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	CALCULATIONS AND PROJECTIONS OF INDICATORS FOR BASE CASES - DETAIL	

Educational Unit:

Indicator #	Legend: BC ABC FBC



	ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	CALCULATIONS AND PROJECTIONS FOR BASE CASES - SUMMARY	
Educational Unit:		Legend: BC ABC FBC	

Indicator	Scale	Fiscal Year					
		CY	Y_1	Y_2	Y_3	Y_4	Y_5

Form #7: Adjusted Base Case - Program and Project Summary and Form #7.1: Adjusted Base Case - Program Summary

1. Fill in the name of your school district on both forms.

2. Enter the total dollars for each program and project from Form #5 in the Current Year Column on Form #7.

3. Enter the toal dollars for each program from Form #5.1 in the Current Year Column on Form #7.1.

4. Project the Salary (S), Non-Salary (NS), Capital Outlay (C)), and Debt Service (DS) for each program and project on Form #7 for Y-1 through Y-5 according to the rules set forth in this section. Worksheet #7.1, #7.2, #7.3 and #7.4 have been designed to help you perform this activity. Enter the Current Year's figures from Worksheet #5.1 onto Worksheet #7.4 for all programs and projects.

    a. Policy and Executive, Comprehensive Planning, Information and Liaison, Community Services, and Coordinative Support Services.

        (1) Copy the figures for Y-1 through Y-5 from Worksheet #5.1 onto Worksheet #7.4.

        (2) These figures are held constant from CY through Y-5.

    b. Early Childhood Instruction, Elementary Instruction, and Secondary Instruction.

        (1) Salary -

            (a) Use Worksheet #7.1 to help you perform these calculations for each program.

            (b) Record these data on Worksheet #7.4.

        (2) Non-Salary -

            (a) Use Worksheet #7.1 to help you perform these calculations for each program.

            (b) Record these data on Worksheet #7.4.

        (3) Capital Outlay - Don't project beyond the first year encountered, unless you have

established a specific schedule of replacement.

(4) Debt Service - Project on the basis of the known schedule for existing plants. If this information is not available project the CY figure as a constant figure for Y-1 through Y-5.

c. Vocational-Technical Instruction

(1) Salary -

(a) Use Worksheet #7.1 to help you perform these calculations.

(b) If the vocational-technical pupils are trained outside the school district the salary costs will be 1/2 that of the regular secondary pupil, if not, the cost will be the same.

(c) Record these data on Worksheet #7.4.

(2) Non-Salary -

(a) Use Worksheet #7.1 to help you perform these calculations.

(b) If the vocational-technical pupils are trained outside the school district the non-salary costs will be 1/2 that of the regular secondary pupil plus the tuition costs paid to the area vocational-technical school district, if not, the cost will be the same.

(3) Capital Outlay - Don't project beyond the first year encountered, unless you have established a specific schedule of replacement.

(4) Debt Service - Project on the basis of the known schedule for existing plants. If this information is not available project the CY figure as a constant figure for Y-1 through Y-5.

d. Special Instruction

(1) Salary -

(a) Use Worksheet #7.4 to help you perform these calculations.

(b) If the special pupils are trained outside the school district the salary cost is zero; if not, the cost is the same for a regular elementary or secondary pupil.

(c) Record these data on Worksheet #7.4.

(2) Non-Salary -

(a) Use Worksheet #7.1 to help you perform these calculations.

(b) If the special pupils are trained outside the school district non-salary cost is the tuition cost, if not, the cost is the same as the cost for a regular elementary or secondary pupil.

(c) Record these data on Worksheet #7.4.

(3) Capital Outlay - Don't project beyond the first year encountered, unless you have established a specific schedule of replacement.

(4) Debt Service - Project on the basis of the known schedule for existing plants. If this information is not available project the CY figure as a constant figure for Y-1 through Y-5.

e. Continuing Instruction - Copy the figures for Y-1 thorugh Y-5 from Form #5.

f. Instructional Support Services

(1) Salary - Copy the figures for Y-1 through Y-5 from Form #5.

(2) Non-Salary -

(a) Use Worksheet #7.2 to ehlp you perform these calculations.

(b) Record these data on Worksheet #7.4.

(3) Capital Outlay - Copy the figures for Y-1 through Y-5 from Form #5.

    (4) Debt Service - Copy the figures for Y-1 through Y-5 from Form #5.

g. Nursing - Copy the figures for Y-1 through Y-5 from Form #5 for Salary, Non-Salary, Capital Outlay, and Debt Service.

h. Medical and Dental

    (1) Salary - The salary cost is zero unless the school district has hired a full time doctor or dentist.

    (2) Non-Salary -

        (a) Use Worksheet #7.2 to help you perform these calculations for each program.

        (b) Record these data on Worksheet #7.4.

    (3) Capital Outlay - Copy the figures for Y-1 through Y-5 from Form #5 for each program.

    (4) Debt Service - Copy the figures for Y-1 through Y-5 from Form #5.

i. Psychological, Health Support Services, General Services, Facilities, and Business Support Services - Copy the figures for Y-1 through Y-5 from Form #5.

j. Pupil Transportation

    (1) Salary -

        (a) Use Worksheet #7.3 to help you perform these calculations.

        (b) Record these data on Worksheet #7.4.

    (2) Non-Salary -

        (a) Use Worksheet #7.3 to help you perform these calculations.

        (b) Record these data on Worksheet #7.4.

    (3) Capital Outlay -

        (a) Use Worksheet #7.3 to help you perform these calculations.

(b) Record these data on Worksheet #7.4.

(4) Debt Service - Copy the figures for Y-1 through Y-5 from Form #5.

k. Food Services

(1) Salary - Copy the figures for Y-1 through Y-5 from Form #5.

(2) Non-Salary -

(a) Use Steps 17 through 21 on Worksheet #7.1 to help you perform these calculations.

(b) Record these data on Worksheet #7.4.

(3) Capital Outlay - Copy the figures for Y-1 through Y-5 from Form #5.

(4) Debt Service - Copy the figures for Y-1 through Y-5 from Form #5.

l. Fixed Charges

(1) Salary -

(a) Include figures for the following expenditures: school district's contribution to employees retirement and school district's share of social security.

(b) Calculate the percent of the total retirement and social security cost (PRSSC) to the total salary (TS) for all programs for CY by dividing total retirement and social security costs (TRSSC) by TS, and multiply the resulting quotient by 100.

(TRSSC / TS) x 100 = PRSSC

(c) Use this percent to calculate the salary (S) costs for Y-1 through Y-5.

TS x PRSSC = S (Y-1 through Y-5)

(d) Record these data on Worksheet #7.4.

(2) Non-Salary - Copy the figures for Y-1 through Y-5 from Form #5.

(3) Capital Outlay - Copy the figures for Y-1 through Y-5 from Form #5.

(4) Debt Service - Copy the figures for Y-1 through Y-5 from Form #5.

m. Projects (Capital and Operations)

(1) If this is the first time you have used the PPBS Procedures Manual skip to Section 9. You will not deal with projects until later in the PPBS Procedure. However, if you used the PPBS Procedure last year to develop a five-year plan continue to the end of the directions.

(2) All projects must be named.

(3) Costs for a given project must not be projected beyond the life of the project.

(4) Salary - Use the figures developed last year for the project for each year the project is to operate or be monitored. Record the parameter values (compound inflation rates, pupil-personnel ratios, etc.) used to calculate these costs in the space below the project title and opposite S. If it is necessary to recalculate these costs because of revised pupil forecasts, then record the new parameter values in the appropriate space.

(5) Non-Salary - Follow the same procedure outlined under salary above.

(6) Capital Outlay - Don't project the Capital Outlay (CO) beyond the first year encountered unless a definite schedule has been established for the project. If the last year's figures have been altered because of changed parameter values record these changes in the appropriate space.

(7) Debt Service - Project debt service (DS) on the basis of the known schedule. If this information is not available project the CY figure as a constant figure for Y-1 through Y-5.

4. Transfer totals from Worksheet #7.4 for each year by program to the appropriate cell on Form #7.1. Don't add in the capital improvement project(s) costs when you total the years from Y-1 through Y-5. Capital imporvement project(s) costs for Y-1 through Y-5 are reflected in the Final Base Case (Form #12).

5. Calculate the Adjusted Base Case Indicator Levels by using Worksheets #6.1 through #6.3. Record all plots on Form #6 and #6.1.

6. Calculate the Salary (S), Non-Salary (NS), Capital Outlay (CO), and Debt Service (DS) for each program for the Current Year (CY). Use a second set of worksheets for this task (Worksheets #7.1, #7.2, #7.3 and #7.4). Enter the total dollars for each program from Form #5.1 in the Current Year Column opposite T (Total) on Worksheet #7.4.

7. Project the S, NS, CO, DS, and T figures for each program from Y-1 through Y-5 according to the rules outlined under Section 3 above and record these data on Worksheet #7.4.

8. Transfer the total for each year by program from Worksheet #7.4 to the appropriate cell on Form #7.1. Capital improvement project(s) costs are reflected in the grand totals on this form.

9. The purpose of the calculations for the Adjusted Base Case on Form #7 is to show the combined effects of inflation and increased or decreased enrollments on expenditures over the next five years for each program and project. The grand totals on Form #7 should exclude the capital improvement project costs for Y-1 through Y-5. The effects of increased costs because of capital improvements will be shown on Form #12.

10. Project expenditures are merged into program expenditures on Form #7.1. The grand totals on this form include the Y-1 through Y-5 capital improvement project costs and, as a result, show the effects over a five year period on each program of inflation, increasing or decreasing enrollment and added cost of capital improvement project(s).

11. If you are using the PPBS procedure for the first time, Form #7 and Form #7.1 will look exactly the same, because you have not developed either capital improvement or operations projects thus far in the PPBS procedure.

WORKSHEET #7.1

Form #7: Adjusted Base Case - Program Project Summary

Directions for Calculating Salary (S) and Non-Salary (NS) for all Instructional Programs Except Instructional Support Service

Step 1

Record below the enrollment (E) by program (Early Childhood Instruction-Kdg., Elementary Instruction - 1 through 6, Secondary Instruction 7 through 12, Vocational-Technical Instruction 10 through 12, or Special Instruction- elementary and secondary) from Form #2:

Grade	CY	Y-1	Y-2	Y-3	Y-4	Y-5
______	___	___	___	___	___	___
______	___	___	___	___	___	___
______	___	___	___	___	___	___
______	___	___	___	___	___	___
______	___	___	___	___	___	___
______	___	___	___	___	___	___
______	___	___	___	___	___	___
Total	___	___	___	___	___	___

Step 2

Record below the total number of teachers (NT) for the Current Year (CY) in the program.

NT __________

Step 3

Divide the E for the program by the NT in the program for CY to derive the pupil-teachers ratio (PTR) for the program.

E / NT = PTR

____ ______ = ______

Step 4

Derive the number of teachers required (NTR) for Y-1 through Y-5 for the program by dividing the E for the program for each year by the PTR for the program. You may round up to the nearest whole number or you may keep the fraction.

E / PTR = NTR

Y-1 ______/______ = ______
Y-2 ______/______ = ______
Y-3 ______/______ = ______
Y-4 ______/______ = ______
Y-5 ______/______ = ______

Step 5

Calculate the number of new teachers required (NNT) for the program from Y-1 through Y-5 by subtracting the NTR of the previous year from the NTR for the year to be calculated.

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
NTR	___	___	___	___	___	___
CY NTR		- ___				
Y-1 NNT		___				
Y-1 NTR			- ___			
Y-2 NNT			___			
Y-2 NTR				- ___		
Y-3 NNT				___		
Y-3 NTR					- ___	
Y-4 NNT					___	
Y-4 NTR						- ___
Y-5 NNT						___

Step 6

Record below the Current Level professional staff turnover rate (PSTR) from Worksheet #4.7:

PSTR __________

Step 7

Calculate the number of teachers remaining (NR) for each of the following groups for the program by multiplying the teachers remaining (TR) of the previous year by the PSTR to arrive at the figure for the year being calculated; and calculate the teacher replacement (R) by subtracting the NR of the year being calculated from the NR of the previous year:

a. CY Group - Record the CY number of teachers (NT) figure (Step 2) in the space provided and calculate the NR from Y-1 through Y-5.

		CY	Y-1	Y-2	Y-3	Y-4	Y-5
CY	NT	___					
	PSTR	x___					
Y-1	NR	___	___				
	PSTR		x___				
Y-2	NR		___	___			
	PSTR			x___			
Y-3	NR			___	___		
	PSTR				x___		
Y-4	NR				___	___	
	PSTR					x___	
Y-5	NR					___	___

b. CY Group - record the CY number of teachers (NT) in the space provided and calculate the (R) from Y-1 through Y-5.

CY NT______ - Y-1 NR______ = Y-1 R______
Y-1 NR______ - Y-2 NR______ = Y-2 R______
Y-2 NR______ - Y-3 NR______ = Y-3 R______
Y-3 NR______ - Y-4 NR______ = Y-4 R______
Y-4 NR______ - Y-5 NR______ = Y-5 R______

c. Y-1 Group - Add the NNT figure (Step 5) to the Y-1 R (Step 7b) to derive the Y-1 group figure and calculate the NR from Y-2 through Y-5.

		Y-1	Y-2	Y-3	Y-4	Y-5
Y-1	Group Figure	___				
	PSTR	x___				
Y-2	NR	___	___			
	PSTR		x___			
Y-3	NR		___	___		
	PSTR			x___		
Y-4	NR			___	___	
	PSTR				x___	
Y-5	NR				___	___

d. Y-1 Group - Record the Y-1 Group Figure in the space provided and calculate the R from Y-2 through Y-5.

Y-1 Group Figure______ - Y-2 NR______ = Y-2 R______
Y-2 NR ______ - Y-3 NR______ = Y-3 R______
Y-3 NR ______ - Y-4 NR______ = Y-4 R______
Y-4 NR ______ - Y-5 NR______ = Y-5 R______

e. Y-2 Group - Add the following figures to derive the Y-2 Group figure and calculate the NR from Y-2 through Y-5:

Y-2 NNT (Step 5) ______________
Y-2 R (Step 7b) ______________
Y-2 R (Step 7d) ______________
Y-2 Group Figure ______________

		Y-2	Y-3	Y-4	Y-5
Y-2	Group Figure	___			
	PSTR	x___			
Y-3	NR	___	___		
	PSTR		x___		
Y-4	NR		___	___	
	PSTR			x___	
Y-5	NR			___	___

f. Y-2 Group - Record the Y-2 Group figure in the space provided and calculate the R from Y-2 through Y-5.

Y-2 Group Figure______ - Y-3 NR______ = Y-3 R______
Y-3 NR ______ - Y-4 NR______ = Y-4 R______
Y-4 NR ______ - Y-5 NR______ = Y-5 R______

g. Y-3 Group - Add the following figures to derive the Y-3 Group figure and calculate the NR from Y-3 through Y-5:

Y-3 NNT (Step 5) ______________
Y-3 R (Step 7b) ______________
Y-3 R (Step 7d) ______________
Y-3 R (Step 7f) ______________
Y-3 Group Figure ______________

		Y-3	Y-4	Y-5
Y-3	Group Figure	___		
	PSTR	x___		
Y-4	NR	___	___	
	PSTR		x___	
Y-5	NR		___	___

h. Y-3 Group - Follow the same procedure as outlinend under Step 7f above.

Y-3 Group Figure_______ - Y-4 NR = Y-4 R_______

Y-4 NR _______ - Y-5 NR = Y-5 R_______

i. Y-4 Group - Add the following figures to derive the Y-4 Group figure and calculate the NR from Y-4 through Y-5:

Y-4 NNT (Step 5) ______________
Y-4 R (Step 7b) ______________
Y-4 R (Step 7d) ______________
Y-4 R (Step 7f) ______________
Y-4 R (Step 7h) ______________
Y-4 Group Figure ______________

		Y-4	Y-5
Y-4	Group Figure	___	
	PSTR	x___	
Y-5	NR	___	___

j. Y-4 Group - Follow the same procedure as outlined under Step 7f above.

Y-4 Group Figure ______ - Y-5 NR = Y-5 R________

k. Y-5 Group - Add the following figures to derive the Y-5 Group figure:

Y-5 NNT (Step 5) ______________
Y-5 R (Step 7b) ______________
Y-5 R (Step 7d) ______________
Y-5 R (Step 7f) ______________
Y-5 R (Step 7h) ______________
Y-5 R (Step 7j) ______________
Y-5 Group Figure ______________

Step 8

Determine the mean CY salary for teachers presently on staff (MST) in the program and the mean salary for all new teachers hired (MSNT) for the program this year.

MST __________________

MSNT__________________

Step 9

Calculate the MST for each group through Y-5 by multiplying the MST or MSNT by the same compound inflation rate (CIR) used to calculate the Base Case salary costs for the program; and calculate the salary (S) costs for each group by multiplying the MST or MSNT by the NR figures for each group for each year through Y-5.

a. CY Group

		CY	Y-1	Y-2	Y-3	Y-4	Y-5
CY	MST	___	___	___	___	___	___
	CIR		x___	x___	x___	x___	x___
	MST	___	___	___	___	___	___

b. CY Group

		CY	Y-1	Y-2	Y-3	Y-4	Y-5
CY	MST	___					
CY	NT (Step 7a)	x___					
	MST	___	___	___	___	___	___
	NR (Step 7b)		x___	x___	x___	x___	x___
	S	___	___	___	___	___	___

c. Y-1 Group

		Y-1	Y-2	Y-3	Y-4	Y-5
CY	MSNT	___	___	___	___	___
	CIR	x___	x___	x___	x___	x___
	MST	___	___	___	___	___

d. Y-1 Group

	Y-1	Y-2	Y-3	Y-4	Y-5
MST	___	___	___	___	___
NR (Step 7c)	x___	x___	x___	x___	x___
S	___	___	___	___	___

e. Y-2 Group

		Y-2	Y-3	Y-4	Y-5
CY	MSNT	___	___	___	___
	CIR	x___	x___	x___	x___
	MST	___	___	___	___

f. Y-2 Group

	Y-2	Y-3	Y-4	Y-5
MST	___	___	___	___
NR (Step 7e)	x___	x___	x___	x___
S	___	___	___	___

g. Y-3 Group

		Y-3	Y-4	Y-5
CY	MSNT	___	___	___
	CIR	x___	x___	x___
	MST	___	___	___

h. Y-3 Group

	Y-3	Y-4	Y-5
MST	___	___	___
NR (Step 7g)	x___	x___	x___
S	___	___	___

i. Y-4 Group

		Y-4	Y-5
CY	MSNT	___	___
	CIR	x___	x___
	MST	___	___

j. Y-4 Group

	Y-4	Y-5
MST	___	___
NR (Step 7i)	x___	x___
S	___	___

k. Y-5 Group

CY MSNT________________

l. Y-5 Group

CY MSNT______ x Y-5 Group Figure (Step 7k) =
Y-5 S________

Step 10

Calculate the total salary (TS) costs for Y-1 through Y-5 by adding the salary (S) costs of all the groups.

	Y-1	Y-2	Y-3	Y-4	Y-5
CY Group	___	___	___	___	___
Y-1 Group	___	___	___	___	___
Y-2 Group		___	___	___	___
Y-3 Group			___	___	___
Y-4 Group				___	___
Y-5 Group					___
TS	___	___	___	___	___

Step 11

Record these data on Worksheet #7.4.

Step 12

Record below the Current Year's non-salary cost (CYNSC) for the program from Worksheet #7.4:

CYNSC ___________

Step 13

Calculate the non-salary cost per pupil (NSCP) for the program by dividing the CYNSC by the enrollment (E).

CYNSC/ E = NSCP

______/______ = ______

Step 14

Calculate the NSCP for the program for Y-1 through Y-5 by multiplying the NSCP by a compound inflation rate (CIR). Select the same rate used in calculating the non-salary costs for the program in the Base Case.

		CY	Y-1	Y-2	Y-3	Y-4	Y-5
CY	NSCP	___	___	___	___	___	___
	CIR		x___	x___	x___	x___	x___
	NSCP	___	___	___	___	___	___

Step 15

Derive the total non-salary cost (TNSC) for the program from Y-1 through Y-5 by multiplying the E by the NSCP for each year.

	Y-1	Y-2	Y-3	Y-4	Y-5
E	___	___	___	___	___
NSCP	x___	x___	x___	x___	x___
TNSC	___	___	___	___	___

Step 16

Record these data on Worksheet #7.4.

WORKSHEET #7.2

Form #7 - Adjusted Base Case - Program and Project Summary

Directions for Calculating Non-Salary (NS) for Instructional Support Services, Medical, and Dental Programs

Step 1

Record below the weighted pupil enrollment-finance (WPE-F) for CY through Y-5 from Worksheet #2.3:

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
WPE-F	___	___	___	___	___	___

Step 2

Record below the Current Year's non-salary cost (CYNSC) for the program from Worksheet #7.3:

CYNSC __________

Step 3

Calcualte the non-salary cost per pupil (NSCP) for the program by dividing the CYNSC by the WPE-F.

CYNSC/WPE-F = NSCP

_____/_____ = ______

Step 4

Calculate the NSCP for the program for Y-1 through Y-5 by multiplying the NSCP by a compound inflation rate (CIR). Select the same rate used for non-salary costs for the program in the Base Case.

		CY	Y-1	Y-2	Y-3	Y-4	Y-5
CY	NSCP	___	___	___	___	___	___
	CIR		x___	x___	x___	x___	x___
	NSCP	___	___	___	___	___	___

Step 5

Derive the total non-salary costs (TNSC) for the program for Y-1 through Y-5 by multiplying the WPE-F by the NSCP for each year.

	Y-1	Y-2	Y-3	Y-4	Y-5
WPE-F	___	___	___	___	___
NSCP	x___	x___	x___	x___	x___
TNSC	___	___	___	___	___

Step 6

Record these data on Worksheet #7.4.

WORKSHEET #7.3

Form #7 - Adjusted Base Case - Program and Project Summary

Directions for Calculating Salary (S), Non-Salary (NS), and Capital Outlay (CO) for Pupil Transportation Program

Step 1

Record below the total public and private enrollments (TPPE) for CY through Y-5:

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
TPPE	___	___	___	___	___	___

Step 2

Record below the total number of public and private pupils riding (NPR) the school buses for CY:

NPR __________

Step 3

Calculate the percent of pupils riding (PPR) the school buses for CY by dividing NPR by TPPE.

NPR / TPPE = PPR

_____/_____ = _____

Step 4

Calculate the NPR for Y-1 through Y-5 by multiplying the TPPE by the PPR.

	Y-1	Y-2	Y-3	Y-4	Y-5
TPPE	___	___	___	___	___
PPR	X___	X___	X___	X___	X___
NPR	___	___	___	___	___

Step 5

Record below the total number of buses (TNB), total number number of trips for all buses (TNT), and their total seating capacity (TSC) for CY. Calculate the total capacity (TC) in the following manner: total number of buses (TNB) times total number of trips (TNT) times total seating capacity (TSC).

TNB x TNT x TSC = TC

___ x ___ x ___ = ___

Step 6

Calculate the mean total capacity of each bus (MTCB) by dividing the TC by the TNB.

TC / TNB = MTCB
_____/_____ = _____

Step 7

Calculate the TNB for Y-1 through Y-5 by dividing the NPR by the MTCB.

NPR / MTCB = TNB
Y-1 ______/______ = ______
Y-2 ______/______ = ______
Y-3 ______/______ = ______
Y-4 ______/______ = ______
Y-5 ______/______ = ______

Step 8

Calculate the bus - bus driver ratio (BBDR) by dividing the TNB by the number of bus driver (NBD) for CY.

TNB / NBD = BBDR
______/______ = ________

Step 9

Derive the total number of bus drivers needed (TNBD) for Y-1 through Y-5 by dividing the TNB for each year by the BBDR. You may round up to the nearest whole number or you may keep the fraction.

TNB / BBDR = TNBD

Y-1 ______/______ = ______
Y-2 ______/______ = ______
Y-3 ______/______ = ______
Y-4 ______/______ = ______
Y-5 ______/______ = ______

Step 10

Determine the mean CY salary for bus drivers (MSBD) and record below:

MSBD __________

Step 11

Calculate the MSBD for Y-1 through Y-5 by increasing the CY MSBD by the compound inflation rate (CIR) used to calculate the salary costs for the Base Case.

		CY	Y-1	Y-2	Y-3	Y-4	Y-5
CY	MSBD	___	___	___	___	___	___
	CIR		x___	x___	x___	x___	x___
	MSBD	___	___	___	___	___	___

Step 12

Calculate the total salary cost for bus drivers (TSCBD) for Y-1 through Y-5 by multiplying the MSBD by the TNBD for each year.

	Y-1	Y-2	Y-3	Y-4	Y-5
MSBD	___	___	___	___	___
TNBD	x___	x___	x___	x___	x___
TSCBD	___	___	___	___	___

Step 13

Calculate the total salary cost (TSC) for Y-1 through Y-5 by adding any additional salary costs (ASC) to TSCBD. (Increase ASC by the same CIR used in Step 11.)

	Y-1	Y-2	Y-3	Y-4	Y-5
TSCBD	___	___	___	___	___
ASC	+___	+___	+___	+___	+___
TSC	___	___	___	___	___

Step 14

Record these data on Worksheet #7.4.

Step 15

Record below the non-salary cost (NSC) for CY:

NSC ___________

Step 16

Calculate the mean non-salary cost per bus (MNSCB) by dividing the NSC by the TNB for CY.

NSC /TNB = MNSCB

______/______ = ______

Step 17

Calculate the MNSCB for Y-1 through Y-5 by multiplying the CY MNSCB by the CIR used to calculate the non-salary cost for the Base Case.

		CY	Y-1	Y-2	Y-3	Y-4	Y-5
CY	MNSCB	___	___	___	___	___	___
	CIR		x___	x___	x___	x___	x___
	MNSCB	___	___	___	___	___	___

Step 18

Calculate the total non-salary costs (TNSC) for Y-1 through Y-5 by multiplying the MNSCB by the TNB for each year.

	Y-1	Y-2	Y-3	Y-4	Y-5
MNSCB	___	___	___	___	___
TNB	x___	x___	x___	x___	x___
TNSC	___	___	___	___	___

Step 19

Record these data on Worksheet #7.4.

Step 20

Record below the mean purchase cost of a bus (MPB) for CY:

MPB ___________

Step 21

Calculate the total capital outlay cost (TCOC) for Y-1 through Y-5 by multiplying the MPB by the number of new buses (NNB) to be added each year.

	Y-1	Y-2	Y-3	Y-4	Y-5
MPB	___	___	___	___	___
NNB	x___	x___	x___	x___	x___
TCOC	___	___	___	___	___

Step 22

Record these data on Worksheet #7.4.

WORKSHEET #7.4

Forms #7 and #7.1 - Adjusted Base Case - Program and Project Summary

Program	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coordinative Program Area Policy & Executive	S						
	NS						
	CO						
	DS						
	T						
Comprehensive Planning	S						
	NS						
	CO						
	DS						
	T						
Information & Liaison	S						
	NS						
	CO						
	DS						
	T						
Community Services	S						
	NS						
	CO						
	DS						
	T						
Coordinative Support Ser.	S						
	NS						
	CO						
	DS						
	T						
Instructional Program Area Early Childhood Instruction	S						
	NS						
	CO						
	DS						
	T						
Elementary Instruction	S						
	NS						
	CO						
	DS						
	T						
Secondary Instruction	S						
	NS						
	CO						
	DS						
	T						

Program	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Voc.-Tech. Instruction	S						
	NS						
	CO						
	DS						
	T						
Special Instruction	S						
	NS						
	CO						
	DS						
	T						
Continuing Instruction	S						
	NS						
	CO						
	DS						
	T						
Instr. Support Services	S						
	NS						
	CO						
	DS						
	T						
Health Program Area Nursing	S						
	NS						
	CO						
	DS						
	T						
Medical	S						
	NS						
	CO						
	DS						
	T						
Dental	S						
	NS						
	CO						
	DS						
	T						
Psychological	S						
	NS						
	CO						
	DS						
	T						
Health Support Services	S						
	NS						
	CO						
	DS						
	T						

Program	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Business Program Area General Services	S						
	NS						
	CO						
	DS						
	T						
Pupil Transportation	S						
	NS						
	CO						
	DS						
	T						
Food Services	S						
	NS						
	CO						
	DS						
	T						
Facilities	S						
	NS						
	CO						
	DS						
	T						
Fixed Charges	S						
	NS						
	CO						
	DS						
	T						
Business Support Services	S						
	NS						
	CO						
	DS						
	T						
Total							

Project	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
	S						
	NS						
	CO						
	DS						
	T						
	S						
	NS						
	CO						
	DS						
	T						
	S						
	NS						
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	S						
	NS						
	CO						
	DS						
	T						
	S						
	NS						
	CO						
	DS						
	T						
	S						
	NS						
	CO						
	DS						
	T						
	S						
	NS						
	CO						
	DS						
	T						
	S						
	NS						
	CO						
	DS						
	T						

ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	ADJUSTED BASE CASE - PROGRAM AND PROJECT SUMMARY	

Educational Unit:

Fiscal Year Program	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coordinative Program Area Policy & Executive						
Comprehensive Planning						
Information & Liaison						
Community Services						
Coordinative Support Ser.						
Annual Cost						
Instructional Program Area Early Childhood Instr.						
Elementary Instruction						
Secondary Instruction						
Voc.-Tech. Instruction						
Special Instruction						
Continuing Instruction						
Instr. Support Services						
Annual Cost						
Health Program Area Nursing						
Medical						
Dental						
Psychological						
Health Support Services						
Annual Cost						
Business Program Area General Services						
Pupil Transportation						
Food Services						
Facilities						
Fixed Charges						
Business Support Services						
Annual Cost						
Program Total Annual Cost						

Page 1 of 2

Form #7

	ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	ADJUSTED BASE CASE - PROGRAM AND PROJECT SUMMARY	

Educational Unit:

Fiscal Year / Project	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Project Total Annual Cost						
Program Total Annual Cost						
Capital Improvement Project(s) Total Annual Cost						
Adjusted Program & Project Total Annual Cost						

	ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	ADJUSTED BASE CASE - PROGRAM SUMMARY

Educational Unit:

Fiscal Year / Program	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coordinative Program Area						
Policy & Executive						
Comprehensive Planning						
Information & Liaison						
Community Services						
Coordinative Support Ser.						
Annual Cost						
Instructional Program Area						
Early Childhood Instr.						
Elementary Instruction						
Secondary Instruction						
Voc.-Tech. Instruction						
Special Instruction						
Continuing Instruction						
Instr. Support Services						
Annual Cost						
Health Program Area						
Nursing						
Medical						
Dental						
Psychological						
Health Support Services						
Annual Cost						
Business Program Area						
General Services						
Pupil Transportation						
Food Services						
Facilities						
Fixed Charges						
Business Support Services						
Annual Cost						
Total Annual Cost						

Form #7.1

Form #8: Capital Improvement Project

1. Fill in this form for every capital improvement project approved by your board of school directors.

2. Updated expenditure data on the project should be transferred from the copy of Worksheet #7.4 which shows program and project costs. The costs should be broken down by program. Use the copy of Worksheet #7.4 which was used to merge program and project costs to aid you in breaking down the project costs by program.

3. If any changes were made in compound inflation rates, personnel-pupil ratios, or other parameter values record this information under the program name on Form #8.

4. Show any reductions in Total Added Annual Operating Cost as a result of support from Federal, State, or other sources. These amounts must be transferred to Form #14 as revenue.

5. Fill in the information called for in Boxes 1, 2 and 3.

6. Write a brief description of the plant, its location, number of pupils serviced for each year through Y-5, size of the staff for each year through Y-5, and the programs offered. Briefly describe the need for the plant.

7. If you have used the PPBS Procedures Manual last year and you produced a five year plan skip the balance of the instructions for this form.

8. However, if you did not develop a five-year plan last school year with the PPBS Procedures Manual please continue through the balance of the instructions.

9. Project the Salary (S), Non-Salary (NS), Capital Outlay (CO), and Debt Service (DS), and Total (T) for each program from Y-1 through Y-5 according to the rules set forth in this seciton. Worksheets #8.1, #8.2 and #8.3 have been provided to facilitate these computations.

    a. Policy and Executive, Comprehensive Planning, Information and Liaison, Community Services, and Coordinative Support Services - In the absence of a detailed, reliable cost accounting system for your school district, dollars from these programs should not be allocated to a capital improvement project.

b. Early Childhood Instruction, Elementary Instruction, and Secondary Instruction - Employ the following procedures when calculating increased cost for a capital improvement, i.e., cost above the projected cost shown on Form #7:

(1) Salary - The increase in teachers and in salary expenditures for Y-1 through Y-5 is reflected in Form #7. This increase is based on the assumption that the pupil-teacher ratio for the Current Year remains constant to Y-5.

(2) Non-Salary - The increase in non-slaary expenditures for Y-1 through Y-5 is reflected in Form #7. This increase is based on the assumption that the per pupil non-salary cost remains constant except for the compound inflation rate. The capital improvement reported here may add to this non-salary cost. If the cost is increased, this cost must be calculated, because it will be used in calculating the Final Base Case.

(a) Use Worksheet #8.1 to aid you in performing these calculations.

(b) Record these data on Worksheet #8.3.

(3) Capital Outlay - Don't project the capital outlay beyond the first year encountered, unless you have established a specific schedule of replacement.

(4) Debt Service - Project debt service on the basis of the known schedule for the capital improvement project. If this information is not available project the start up year's figure to Y-5.

c. Vocational-Technical Instruction and Special Instruction.

(1) Salary - The increase in teachers and in salary cost for Y-1 through Y-5 is reflected in Form #7. This increase is based on the assumption the pupil-teacher ratio for the Current Year remains constant to Y-5.

(2) Non-Salary

(a) The increase for Y-1 through Y-5 is reflected in Form #7. This increase is based on the assumption that the per pupil non-salary cost remains constant except for the compound inflation rate increase for each year. The capital improvement reported here may add to this non-salary cost. If the cost is increased, this cost must be calculated, because it will be used in calculating the Final Base Case.

(b) Use Worksheet #8.1 to aid you in performing these calculations.

(c) Record these data on Worksheet #8.3.

(3) Capital Outlay - Don't project beyond the first year encountered, unless you have established a specific schedule of replacement.

(4) Debt Service - Project debt service on the basis of the known schedule for the capital improvement project. If this information is not available project the start up year's figure to Y-5.

d. Continuing Instruction - Unless a portion of the capital outlay under consideration is being allocated specifically for this program no cost will be calculated.

e. Instructional Support Services, Nursing, Medical, Dental, Psychological, Health Support Services, Facilities, and Business Support Services.

(1) Salary

(a) The number of personnel and resulting salary cost in all of these programs has been constant from CY through Y-5. If the capital improvement reported here will increase these costs they must be calculated, because they will be used in the calculations for the Final Base Case.

(b) Worksheet #8.2 has been prepared to aid you in these calculations.

(c) Record these data on Form #8.3.

(2) Non-Salary

(a) The increase in non-salary expenditures for Y-1 through Y-5 is reflected in Form #7. This increase is based on the assumption that the per pupil non-salary cost remains constant except for the compound inflation rate increase for each year. If this capital improvement project adds to the non-salary costs calculate the additional cost.

(b) Worksheet #8.2 has been prepared to aid you in these calculations.

(c) Record these data on Form #8.3.

(3) Capital Outlay - Don't project beyond the first year encountered, unless you have established a specific schedule of replacement.

(4) Debt Service - Project debt service on the basis of the known schedule for the capital improvement project. If this information is not available, project the start up year's figure to Y-5.

f. General Services - In the absence of a detailed, reliable cost accounting system for your school district, dollars from this program will not be allocated to a capital improvement project.

g. Pupil Transportation

(1) Salary - The increase in bus drivers and in salary expenditures for Y-1 through Y-5 is reflected in Form #7. This increase is based on the assumption the bus-bus driver ratio for the Current Year remains constant to Y-5.

(2) Non-Salary - The increase in non-salary expenditures for Y-1 through Y-5 is reflected in Form #7. This increase is based on the assumption that the per bus non-salary cost remains constant except for the compound inflation rate increase for each year.

(3) Capital Outlay - These calculations have been made for additional buses and are reflected on Form #7. Other capital outlay costs

should not be projected beyond the first year encountered.

(4) Debt Service - Project the debt service on the basis of the known schedule for the capital improvement project. If the information is not available, project the start up year's figure to Y-5.

h. Food Services

(1) Salary - Review the procedure described above under the section Instructional Support Services, etc. and use Worksheet #8.2 for recording your data and making calculations. Record these data on Worksheet #8.3.

(2) Non-Salary - Review the procedure described above under Instructional Support Services, etc. and use Worksheet #8.2 for recording your data and making calculations. Record the data on Worksheet #8.3.

(3) Capital Outlay - Don't project beyond the first year encountered, unless you have established a specific schedule of replacement.

(4) Debt Service - Project the debt service on the basis of the known schedule for the capital improvement. If the information is not available project the start up year's figure to Y-5.

i. Fixed Charges

(1) Salary

(a) If additional staff are added for a capital improvement project, calculate the additional fixed charge salary costs (AFCSC).

(b) The AFCSC is calculated by multiplying the additional salary cost (ASC) by the percent of the total retirement and social security costs (PRSSC) for each year the capital addition is opened from Y-1 through Y-5. The PRSSC was worked out for the Fixed Charge calculations on Form #7.

ASC x PRSSC = AFCSC (Y-1 through Y-5)

(c) Record these data on Worksheet #8.3.

(2) Non Salary - In the absence of a detailed, reliable cost accounting system for the school district, dollars from this program will not be allocated to a capital improvement project.

(3) Capital Outlay - Don't project beyond the first year encountered, unless you have established a specific schedule of replacement.

(4) Debt Service - Project the service on the basis of the known schedule for the capital improvement project. If the information is not available project the start up year's figure to Y-5.

4. Transfer the additional costs for each program to Form #8 from Worksheet #8.3.

5. Show any reductions in Totals Added Annual Operating Cost as a result of support from Federal, State or other sources. These amounts must be transferred to Form #14 as revenue.

WORKSHEET #8.1

Form #8 - Capital Improvement Project

Directions for Calculating Non-Salary Costs for Early Childhood Instructions Elementary Instruction, and Secondary Instruction Programs

Step 1

Record below the number of pupils in the program to be serviced (NPS) by the capital improvement project in the first year:

NPS ___________

Step 2

Record below the estimated additional non-salary costs per pupil (EACP) in the first year that the capital improvement project will add to the per pupil non-salary cost of the program shown on the copy of Worksheet #7.1 used to calculate program and project costs:

EACP ___________

Step 3

Record below the number of pupils in the program to be serviced (NPS) by the capital improvement project during the years it opened from Y-1 through Y-5:

Grade	Y-1	Y-2	Y-3	Y-4	Y-5
______	___	___	___	___	___
______	___	___	___	___	___
______	___	___	___	___	___
______	___	___	___	___	___
______	___	___	___	___	___
______	___	___	___	___	___
Total	___	___	___	___	___

Step 4

Calculate the total additional non-salary costs (ANSC) for each year the capital improvement project is open from Y-1 through Y-5 by multiplying the EACP by the NPS.

	Y-1	Y-2	Y-3	Y-4	Y-5
EACP	___	___	___	___	___
NPS	x___	x___	x___	x___	x___
ANSC	___	___	___	___	___

Step 5

Record these data on Worksheet #8.3.

WORKSHEET #8.2

Form #8: Capital Improvement Project

Directions for Calculating the Salary and Non-Salary Costs for Medical, Dental, Psychological, Health, Facilities, and Bussiness Support Services Programs

Step 1

Record below the additional personnel added (APA) to the program, because of the capital improvement project during the years the improvement is opened from Y-1 through Y-5.

	Y-1	Y-2	Y-3	Y-4	Y-5
APA	___	___	___	___	___

Step 2

Record below the number of personnel currently on staff (NPCS) for the program:

NPCS ___________

Step 3

Record the Current Year's total salary cost (TSC) for the program:

TSC ___________

Step 4

Calculate the mean salary cost (MSC) for the Current Year by dividing the TSC by the NPCS.

TSC / NPCS = MSC

______/______ = ______

Step 5

Calculate the MSC for each year the capital improvement project is opened from Y-1 through Y-5 by multiplying the MSC by a compound inflation rate (CIR) selected from Table 2. Use the same CIR used for the Base Case and Adjusted Base Case.

	Y-1	Y-2	Y-3	Y-4	Y-5
MSC	___	___	___	___	___
CIR	x___	x___	x___	x___	x___
MSC	___	___	___	___	___

Step 6

Calculate the total salary cost (TSC) for the program for each year the capital improvement project is opened by multiplying the MSC by the APA.

	Y-1	Y-2	Y-3	Y-4	Y-5
MSC	___	___	___	___	___
APA	x___	x___	x___	x___	x___
TSC	___	___	___	___	___

Step 7

Record these data on Worksheet #8.3.

Step 8

Record below the number of pupils in the program to be serviced (NPS) by the capital improvement during the years it is opened from Y-1 through Y-5:

Grade	Y-1	Y-2	Y-3	Y-4	Y-5
_____	___	___	___	___	___
_____	___	___	___	___	___
_____	___	___	___	___	___
_____	___	___	___	___	___
_____	___	___	___	___	___
_____	___	___	___	___	___
Total	___	___	___	___	___

Step 9

Record below the additional non-salary costs (ANSC) for the program for the first year the capital improvement is opened.

ANSC ___________

Step 10

Calculate the per pupil non-salary cost (PNSC) for the first year the capital improvement is opened. Use weighted pupil enrollment-finance figures if the capital improvement project services a mixed pupil pupil population, such as, kindergarten and elementary or elementary and secondary (single session kdg. - 0.5; double session kdg. - 1.0; grades 1-6 and elementary special education - 1.0; and grades 7-12 secondary special education and vocational-technical education - 1.25). The calculation is performed by dividing the ANSC by the NPS.

ANSC / NPS = PNSC
______/______ = ______

Step 11

Calculate the PNSC for each year the capital improvement is opened from Y-1 through Y-5 by multiplying the PNSC by a compound inflation rate (CIR) selected from Table 2. Use the same rate that was used in calculating the Base Case and Adjusted Base Case.

	Y-1	Y-2	Y-3	Y-4	Y-5
PNSC	___	___	___	___	___
CIR	x___	x___	x___	x___	x___
PNSC	___	___	___	___	___

Step 12

Calculate the total non-salary cost (TNSC) for the program for each year the capital improvement is opened by multiplying the PNSC by the NPS. Use weighted pupil enrollment figures if the capital improvement services a mixed pupil population.

	Y-1	Y-2	Y-3	Y-4	Y-5
PNSC	___	___	___	___	___
NPS	x___	x___	x___	x___	x___
TNSC	___	___	___	___	___

Step 13

Record these data on Worksheet #8.3.

WORKSHEET #8.3

Form #8 - Capital Improvement Project

Program	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coord. Program Area Policy & Executive	S						
	NS						
	CO						
	DS						
	T						
Comprehensive Planning	S						
	NS						
	CO						
	DS						
	T						
Information & Liaison	S						
	NS						
	CO						
	DS						
	T						
Community Services	S						
	NS						
	CO						
	DS						
	T						
Coordinative Support Ser.	S						
	NS						
	CO						
	DS						
	T						
Instructional Program Area Early Childhood Instruction	S						
	NS						
	CO						
	DS						
	T						
Elementary Instruction	S						
	NS						
	CO						
	DS						
	T						
Secondary Instruction	S						
	NS						
	CO						
	DS						
	T						

Page 1 of 3

Program	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Voc.-Tech. Instruction	S						
	NS						
	CO						
	DS						
	T						
Special Instruction	S						
	NS						
	CO						
	DS						
	T						
Continuing Instruction	S						
	NS						
	CO						
	DS						
	T						
Instr. Support Services	S						
	NS						
	CO						
	DS						
	T						
Health Program Area Nursing	S						
	NS						
	CO						
	DS						
	T						
Medical	S						
	NS						
	CO						
	DS						
	T						
Dental	S						
	NS						
	CO						
	DS						
	T						
Psychological	S						
	NS						
	CO						
	DS						
	T						
Health Support Services	S						
	NS						
	CO						
	DS						
	T						

Worksheet #8.3

Page 2 of 3

Program	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Business Program Area General Services	S						
	NS						
	CO						
	DS						
	T						
Pupil Transportation	S						
	NS						
	CO						
	DS						
	T						
Food Services	S						
	NS						
	CO						
	DS						
	T						
Facilities	S						
	NS						
	CO						
	DS						
	T						
Fixed Charges	S						
	NS						
	CO						
	DS						
	T						
Business Support Services	S						
	NS						
	CO						
	DS						
	T						

Worksheet #8.3

Page 3 of 3

ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	CAPITAL IMPROVEMENT PROJECT

1. Project Title & Location

2. Project #

3. New Project? Yes ☐ ☐
Revised Request Yes ☐ No ☐
In Long Range Plan? Yea ☐ No ☐
Priority? No.____of_____
Estimated Useful Life_______Yrs.
Date Begin? ________________
Date Complete?______________
Number of Students in First Year? ____________
Estimated Construction Cost? $________________
Number of Standard Classrooms ______________

4. Description & Justification

6. Added Major Program	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
TOTAL ADDED ANNUAL OPERATING COST						

7. Revenue Related to Added Operating Costs	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Less - Federal						
Less - State						
Less - Other						
TOTAL REVENUE RELATED TO ADDED OPERATING COST (Transfer to Form #14)						

Form #8

Form #9: Capital Improvement Project(s) - Program Summary

1. Fill in the name of your school district.
2. Transfer the data from Form #8. If more than one capital improvement is involved combine these data by program.
3. This form provides a convenient summary of all capital improvement projects that can be utilized in Report #1.

	ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	CAPITAL IMPROVEMENT PROJECT(S) - SUMMARY	

Educational Unit:

Fiscal Year Project	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coordinative Program Area Policy & Executive						
Comprehensive Planning						
Information & Liaison						
Community Services						
Coordinative Support Ser.						
Annual Added Cost						
Instructional Program Area Early Childhood Instr.						
Elementary Instruction						
Secondary Instruction						
Voc.-Tech. Instruction						
Special Instruction						
Continuing Instruction						
Instr. Support Services						
Annual Added Cost						
Health Program Area Nursing						
Medical						
Dental						
Psychological						
Health Support Services						
Annual Added Cost						
Business Program Area General Services						
Pupil Transportation						
Food Services						
Facilities						
Fixed Charges						
Business Support Services						
Annual Added Cost						
Total Annual Added Cost						

Form #9

Form #10: Program - Detail and
Form #10.1: Project - Detail

1. Fill in the name of your school district.

   a. Fill in the name of the Program Area, Program, and Program Manager. Appendix A contains a listing of the Program areas and Programs. The Program Manager is the individual designated to supervise the program or one who is gneerally responsible for program development.

   b. A form is to be filled out for all twenty-three programs; however, you may fill out additional forms for sub-programs if you wish.

   c. Circle the indicator(s) influenced by the program.

   d. In most cases the box marked Continuing should be checked. However, it is possible that a program was begun the precious year or is being instituted during the current school year. Check the box marked Tentative in the former case or the box marked New in the latter case.

   e. Transfer the data from the copy of Worksheet #7.4 used for programs and projects to the Program Cost Section. Don't add in capital improvement of operations project costs.

   f. Develop a parsimonious, comprehensive, and accurate description of each program. The description should contain the following:

      (1) A concise, general description of the content of the program and a listing of all of its sub-programs;

      (2) Clientele served by the program from CY through Y-5;

      (3) Number of professional and non-professional staff members by manpower category (see Form #13) employed in the program from CY through Y-5;

      (4) Plant committed to the program;

      (5) Description of the methods, procedures and techniques used to execute and control the program; and

(6) Parameter values used in projecting the expenditures for the program.

2. If you are using the PPBS Procedure for the first time, don't fill out Form #10.1. This form has been provided for school districts who used the procedure last year and, as a result, have instituted new projects or are continuing old projects during the present school year.

3. Record only operations projects on Form #10.1. Capital improvement projects are recorded on Form #8.

4. Fill in the name of your school district on Form #10.1.

   a. Fill in the Project Title and the name of the Project Manager. The Project Manager is the individual designated to supervise the project or one who is generally responsible for project development.

   b. Circle the indicator(s) influenced by the project.

   c. If the project has been running for several years, check the box marked Continuing. However, if the project was begun last year or instituted this year, check the box marked Tentative in the former case or the box marked New in the latter case.

   d. Transfer the data from the copy of Worksheet #7.4 used for both programs and projects.

   e. Fill in the information on additional revenues, if any, that the project brings into the school district. Transfer this information to Form #14: Revenue Forecast.

   f. Write a comprehensive description of each project that contains the informational content required for the detailed program descriptions.

ANALYSIS AND SUMMARIZATION - FINAL BASE CASE

PROGRAM - DETAIL

Educational Unit:

Program Area:

Program:

Program Manager:

Subprogram:

Related Indicators:

1 2 3 4 5 6 7 8 9 10 11 12

Continuing ☐
Tentative ☐
New ☐

Fiscal Year Program Costs	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Salary						
Non-Salary						
Capital Outlay						
Debt Service						
Total Annual Cost						

Program Description:

Form #10

	ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	PROJECT - DETAIL	

Educational Unit:	Project Title:	Project Manager:

Related Indicators:

1 2 3 4 5 6 7 8 9 10 11 12

Continuing ☐
Tentative ☐
New ☐

Fiscal Year / Project Costs	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Salary						
Non-Salary						
Capital Outlay						
Debt Service						
Total Annual Cost						

Fiscal Year / Revenue Related to Annual Operating Costs	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Less - Federal						
Less - State						
Less - Other						
Total Revenue Related to Added Operating Cost (Transfer to Form #14)						

Project Description:

Form #10.1

Form #11: Program Review and Form #11.1: Project Review

1. Fill in the name of your school district on Form #11. A form should be filled out for each of the twenty-three programs and all subprograms for which a Form #10 has been filled out.

   a. Fill in the name of the Program Area, Program and Program Manager. The Program Manager is the individual designated to supervise the program or one who is generally responsible for program development.

   b. Circle the indicator(s) influenced by the program.

   c. In most cases the box marked Continuing should be checked. However, it is possible that a program was begun the previous year or is being instituted during the current school year. Check the box marked Tentative in the former case or the box marked New in the latter case.

   d. Develop a concise review of the progress in the program during the present school year. Describe any problems that have emerged in the program.

   e. State the main objective of the program, if possible, in terms that will enable measurement of progress or lack of progress toward the objective.

   f. Enumerate any policy change(s) that have been passed that have affected the program as originally conceived. If no policy changes have taken place, leave this space blank.

   g. Describe any related forecast(s) that indicate a need for a change in the program as it was originally conceived. Leave this space blank if a need for a change is not indicated by forecasts.

   h. List one to three possible solutions for the problem(s). Leave blank if no problem has been identified.

   i. Suggest future course(s) of action concerning the program.

2. Fill out a Form #11.1 for each capital improvement project and operations project shown on Form #8 and Form #10.1.

a. Fill in the name of your school district on Form #11.1.

b. Fill in the name of the Project Title and Project Manager. The Project Manager is the individual designated to supervise the project or one who is generally responsible for project development.

c. Circle the indicator(s) influenced by the project.

d. In most cases the box marked Continuing should be checked. However, it is possible that a project was begun the previous year or is being instituted during the current school year. Check the box marked Tentative in the former case or the box marked New in the latter case.

e. Develop a concise review of the progress in the project during the present school year. Describe any problems that have emerged in the project.

f. State the main objective of the project, if possible, in terms that will enable measurement of progress or lack of progress toward the objective.

g. Enumerate any policy change(s) that have been passed that have affected the project as originally conceived. If no policy changes have taken place, leave this space blank.

h. Describe any realted forecast(s) that indicate a need for a change in the project as it was originally conceived. Leave this space blank if a need for a change is not indicated by forecasts.

i. List one to three possible solutions for the problem(s). Leave blank if a problem has not been identified.

j. Suggest future course(s) of action concerning the project.

	ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	PROGRAM REVIEW	
Educational Unit:	Program Area:	Program:	Program Manager:
Subprogram:	Related Indicators: 1 2 3 4 5 6 7 8 9 10 11 12		Continuing ☐ Tentative ☐ New ☐

Program Review:

ED037815

Main Objective of the Program:

Policy Change(s) Affecting Program:

Related Forecast Error(s):

Possible Solution(s):

Proposed Action(s):

EA 002 753 (Vol. II)

Available from Fels Institute of Local and State Government, University of Pennsylvania Philadelphia, Pennsylvania 19104 ($25.00

Form #11

ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	PROJECT REVIEW	
Educational Unit:	Project Title:	Project Manager:

Related Indicators:

1 2 3 4 5 6 7 8 9 10 11 12

Continuing ☐
Tentative ☐
New ☐

Project Review:

Main Objective of the Project:

Policy Change(s) Affecting Project:

Related Forecast Error(s):

Possible Solution(s):

Proposed Action(s):

Form #11.1

Form #12: Final Base Case - Program and Project Summary and Form #12.1: Final Base Case - Program Summary

1. Fill in the name of your school district on each form.

2. Transfer the total costs from Forms #8, #10 and #10.1 for each program and project to Form #12.

3. Calculate the Final Base Case Indicator Levels by using Worksheets #6.1 through #6.13. Additional costs for capital improvement project(s) will change some of the indicator levels. Record all plots on Form #6 and #6.1.

4. If you have used the PPBS Procedure last year transfer the totals for each program from the copy of Form #7.1 to Form #12.1.

5. If you are using the procedure for the first time, transfer the costs from Form #7.1 to the ABC cells on Worksheet #12.1. Transfer the capital improvement project(s) costs from Form #8 to the cell marked CI on Worksheet #12.1. Add the ABC and CI costs together to derive the total costs for each program. Transfer the total cost for each program to Form #12.1.

6. The purpose of the calculations for the Final Base Case exhibited on Form #12 is to show: (1) the combined effects of inflation, increased or decreased enrollment, and added costs because of capital improvement project(s) on the expenditure pattern over the next five years for each program; and (2) the combined effects of inflation and increased or decreased enrollment on each project's expenditure pattern over the next five years.

7. Form #12.1 shows all of these effects for the twenty-three basic programs.

ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	FINAL BASE CASE - PROGRAM AND PROJECT SUMMARY	

Educational Unit:

Fiscal Year Program Area	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coordinative Program Area Policy & Executive						
Comprehensive Planning						
Information & Liaison						
Community Services						
Coordinative Support Ser.						
Annual Cost						
Instructional Program Area Early Childhood Instr.						
Elementary Instruction						
Secondary Instruction						
Voc.-Tech. Instruction						
Special Instruction						
Continuing Instruction						
Instr. Support Services						
Annual Cost						
Health Program Area Nursing						
Medical						
Dental						
Psychological						
Health Support Services						
Annual Cost						
Business Program Area General Services						
Pupil Transportation						
Food Services						
Facilities						
Fixed Charges						
Business Support Services						
Annual Cost						
Total Annual Cost						

Form #12

Page 1 of 2

	ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	FINAL BASE CASE - PROGRAM AND PROJECT SUMMARY	

Educational Unit:

Fiscal Year / Project	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Project Total Annual Cost						
Program Total Annual Cost						
Program and Project Total Annual Cost						

Form #12

Page 2 of 2

	ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	FINAL BASE CASE - PROGRAM SUMMARY	

Educational Unit:

Fiscal Year / Program	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coordinative Program Area						
Policy & Executive						
Comprehensive Planning						
Information & Liaison						
Community Services						
Coordinative Support Ser.						
Annual Cost						
Instructional Program Area						
Early Childhood Instruction						
Elementary Instruction						
Secondary Instruction						
Voc.-Tech. Instruction						
Special Instruction						
Continuing Instruction						
Instr. Support Services						
Annual Cost						
Health Program Area						
Nursing						
Medical						
Dental						
Psychological						
Health Support Services						
Annual Cost						
Business Program Area						
General Services						
Pupil Transportation						
Food Services						
Facilities						
Fixed Charges						
Business Support Services						
Annual Cost						
Total Annual Cost						

Form #12.1

WORKSHEET #12.1

Form #12 - Final Base Case - Summary

Program	Cat.	Manpower Requirements	Fiscal Year					
			Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coord. Program Area								
Policy & Executive	ABC							
	CI							
	T							
Comprehensive Planning	ABC							
	CI							
	T							
Information & Liaison	ABC							
	CI							
	T							
Community Services	ABC							
	CI							
	T							
Coordinative Support Services	ABC							
	CI							
	T							
Instructional Program Area								
Early Childhood Instruction	ABC							
	CI							
	T							
Elementary Instruction	ABC							
	CI							
	T							
Secondary Instruction	ABC							
	CI							
	T							
Voc.-Tech. Instruction	ABC							
	CI							
	T							
Special Instruction	ABC							
	CI							
	T							
Continuing Instruction	ABC							
	CI							
	T							
Instr. Support Services	ABC							
	CI							
	T							

Page 1 of 2

Program	Cat.	Manpower Requirements	Fiscal Year					
			Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Health Program Area								
Nursing	ABC							
	CI							
	T							
Medical	ABC							
	CI							
	T							
Dental	ABC							
	CI							
	T							
Psychological	ABC							
	CI							
	T							
Health Support Services	ABC							
	CI							
	T							
Business Program Area								
General Services	ABC							
	CI							
	T							
Pupil Transportation	ABC							
	CI							
	T							
Food Services	ABC							
	CI							
	T							
Facilities	ABC							
	CI							
	T							
Fixed Charges	ABC							
	CI							
	T							
Business Support Services	ABC							
	CI							
	T							

Form #13: Manpower Requirements - Final Base Case

1. Fill in the name of your school district.

2. Fill in the data concerning the type of position and the number presently employed in these positions in the Current Year Column.

3. The projection figures for Elementary Teachers and Secondary Teachers can be found on Forms #10 and #10.1. These figures can be projected by category, grade level, or subject speciality.

4. All other employment figures are held constant from Current Year through Y-5 except where staff has been added for capital improvement and operations project(s). Worksheet #8.2 and Form #10.1 should contain these data.

5. The New Positions Column (NP) contains the difference between the position requirements of the year under consideration and the number of persons in that position the previous year.

6. The Staff Turnover Column (ST) contains data on staff turnover. This figure is derived by taking the percent of turnover for teachers based on past experience and applying this percent of turnover to the previous year's figures (see Worksheet #7.1). If desired, turnover rates can be applied to other positions.

7. The Total to be Hired is the sum of the NP and the ST positions for any given year.

8. The Total Staff Required is derived by adding the NP figure to the previous year's figure for total staff.

ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	MANPOWER REQUIREMENTS-FINAL BASE CASE	

Educational Unit:

Fiscal Year / Position	Current Year	Y_1 ___		Y_2 ___		Y_3 ___		Y_4 ___		Y_5 ___	
	Number Employed	NP	ST	NP	ST	NP	ST	NP	ST	NP	ST
Professional Admn.											
Superintendent											
Asst. Supt., Bus.											
Asst. Supt., Ed.											
H. S. Principal											
Jr. H. S. Prin.											
Elementary Prin.											
Directors											
Coordinators											
Asst. Prin.											
Other											
Professional Inst.											
Elementary											
Grades 1-3											
Grades 1-6											
Secondary											
Math											
Social Sciences											
Physical Sci.											
Lang. Arts											
Foreign Lang.											
Data Processing											
Other											
Inst. Specialists											
Art											
Music											
Reading											
Librarian											
Physical Ed.											
Guidance											
Nurses											
Psychologist											
Special Ed.											
Teachers Aid											
Other											
Collateral Services											
Clerical											
Operation											
Maintenance											
Bus Drivers											
Food Service											
Other											
Total to be Hired		+		+		+		+		+	
Total Staff Required											

Form #13

Form #14: Revenue Forecast

1. Fill in the name of your school district.

2. Review Appendix F, which discusses (a) revenue projection methodology, (b) strengths and weaknesses of several projection methods, and (c) possible projection methods for specific taxes and subsidies. Appendix F is intended to provide a basis for selecting between various alternative projection methods, these methods being used to complete the worksheets for Form #13.

3. Proceed to the Form #14 Worksheets

    a. Enter all available data on actual revenue, base, rate, and yield experience during the Current Year and the previous four years, for all revenue sources shown on Worksheets #14.1 through #14.7.

    b. For the Current Year use the Government Studies Center forecasts procedure or use others for specific revenue sources which you feel will be more satisfactory; for future years develop revenue forecasts by any of the methods suggested in the procedures or Appendix F, or by other methods which you feel will produce satisfactory results.

4. Revenue projection worksheets and procedures - The following discussion deals solely with the manner for making projections and the line-by-line completion of the revenue projection worksheets. Detailed discussion of projection alternatives is included in the Appendix. Recommendations concerning projection methods to be used for revenue sources also are provided as part of the procedure for completing the worksheets; however, the revenue projection methodology relates more to projections for future years than to the development of projections for the current year. With more time to accumulate a revenue data file, projections made as part of the current year can be evaluated and reviewed. Because of the reliance which has been placed on straight- line time trend projections for the current year, the discussion of calculations and use of straight- line projections (in the Appendix) should be carefully reviewed.

    In addition the worksheets and procedures provided assume that the present accounting code and methods of computing state subsidies remain unchanged. Any alterations will require changes in both procedures and worksheets. The numbers appearing in parenthesis on the worksheets correspond to the numbering system employed by the DPI School Accounting Division, particularly to PISA 16 and 25.

a. Worksheet #14.1 - Real Estate Tax Projections

(1) Line 1. For a detailed discussion of methods of projecting the taxable asseesed value of real estate see Appendix F. For the procedure recommended for the current year only see Appendix F, Notes to Table I, #4 entitled General Plan of Calculations, Base Case, Simplest Procedure. Enter the projections derived.

(2) Lines 2-3. Enter in line 2 either the existing rate in mills or an assumed future rate; to be consistent with the total PPB System you must use the current year millage rate, since the Financial Feasibility - Final Base Case - Form #15 involves calculation of the future millage rate required to meet a futute level of expenditures. projected assessed value (line 1) to obtain assessed real estate tax (line 3). Since the values in lines 1-3 for past years reflect the real estate tax collected, not the tax levied, you may wish to apply a collection factor appropriate to your school district in projecting. In such a case enter this figure in line 3 for years 1-5.

(3) Lines 4-5. Project penalties based on the proportion which penalties have been of the assessed tax in projection. Add this to assessed tax to obtain gross assessed tax (line 5).

(4) Lines 6-10. These are a series of deductions from the gross assessed tax (line 5). Returned to county is normally the largest. Projections can be made by straight-line time trend methods or some proportion of gross assessed tax, or judgment. Due to the nature of these items, judgment is recommended.

(5) Line 11. This line, as with all adjustment lines on each worksheet, simply permits any necessary adjustment in the computation process.

(6) Line 12. Enter the computed current real estate tax for each future year.

(7) Line 13. Projections should be done by straight-line time trend methods or judgment, if the interim real estate is used.

(8) Line 14. Add lines 12 and 13 to obtain a total for Current and Interim Real Estate.

b. Worksheets #14.2a and #14.2b - Per Capita Tax Projections

(1) Lines 16 and 31. Methods for projecting per capita taxes and the estimates provided, as related to the Government Studies Center's procedure for estimating enrollment, are discussed in Appendix F, Table II. For the current year it is recommended that an effort be made to obtain information on the population over 21 and that the projection be made on this basis.

(2) Lines 17 and 32. The existing rate in dollars per person should be projected unless a rate change is assured.

(3) Lines 18 and 33. Multiply line 16 by 17 and line 31 by 32 to obtain the assessed tax for each per capita tax. Enter these totals in lines 18 and 33 respectively. Again you may wish to apply a collection factor in obtaining values for future years. In such a case enter this figure in lines 18 and 33.

(4) Lines 19-27 and 34-42. Make the necessary additions and subtractions entering the totals in lines 27 and 42. Projections for these items can be obtained by assessed tax, or judgment. Lines 25 and 40 may be used to reflect current amounts received, but reported in other years. Lines 26 and 41 can accomodate other additional factors with reference to the tax.

(5) Lines 43-44. Enter the sub-totals from line 27 into line 43; add lines 42 and 43 to obtain a total for per capita taxes in line 44.

c. Worksheet #14.3a - Other Act 511 Taxes

(1) Lines 46-53. Straight-line time trend or judgment can be used to project the remaining Act 511 taxes other than per capita. Specific economic factors involved in projecting the base of the (1) wage and income, (2) real estate transfer, and (3) occupation taxes are presented in Appendix F, Table II. School districts for which these taxes provide a relatively significant revenue yield will want to consider the projection alternatives presented in Table II. Other school districts can be content with judgmental projections.

(2) Line 54. Enter the total of lines 46-53.

(3) Lines 55-60. Use these lines for projections of the tax base for any of the 511 taxes which you wish to project in terms of changes in economic factors affecting the tax.

d. Worksheet #14.3b - Payments in Lieu of Taxes

(1) Lines 61-65. Project the various payments in lieu of taxes on the basis of best judgment or straight-line time trend.

(2) Lines 70-75. These lines are left available for adjustments or additions to existing taxes.

e. Worksheet #14.3c - Other Local Sources and Totals

(1) Lines 76-82. Use of straight-line time trend methods may be appropriate for these local sources. Delinquent taxes (line 76) may be projected as a proportion of total local tax revenues collected during the last several years; earnings on temporary deposits should be estimated on the basis of the anticiapted level of deposits. Revenue yield from sale of equipment, real estate, and gifts are episodic, but yield from sales should be relatively predictable.

(2) Line 84. Enter total of lines 76-82.

(3) Line 85-90. Enter lines 14, 44, 54, 65, and 84 respectively in lines 85-89. Total of lines 85-89 should be entered in line 90, to

obtain total yield from local revenue sources.

f. Worksheet #14.4 - Basic State Instructional Subsidy

(1) Line 91. See the discussion of real estate tax projections in Appendix F and particularly Table I. An estimate of market value of real property should have been developed as part of the general plan for calculating the taxable assessed value of real estate (line 1).

(2) Line 92. Obtain the weighted average daily membership (WADM) projections by computation from the enrollment projections located on Form #2, multiplying 0.5 by the kindergarten (single session only), 1.0 by elementary, and 1.36 by the secondary school projections. This WADM may be reduced by 4 percent for an absentee factor. Enter the WADM obtained on this line. (Methodology for enrollment projections is discussed in Appendix E.)

(3) Line 93. Market value or real property in the district (line 91) should be divided by WADM (line 92) and the result entered here.

(4) Line 94. Obtain the statewide market value per weighted pupil and enter here.

Note: Projections of Pennsylvania market value per pupil have been developed by the Government Studies Center assuming a 2.5 percent increase in market value of taxable, and using our projections of weighted average daily membership statewide. The series is as follows:

1968-69	$16,275	1974-75	$19,132
1969-70	16,289	1975-76	20,033
1970-71	16,306	1976-77	20,984
1971-72	16,332	1977-78	21,980
1972-73	17,271	1978-79	23,035
1973-74	18,281	1979-80	24,166

(5) Lines 95-97. Divide the market value of real property per pupil (line 93) by the statewide market value per weighted pupil to obtain the state-local ratio for district. Multiply this amount by .50 to obtain the district share, which is subtracted from 1.000 to

obtain the aid ratio, which is entered in line 97.

(6) Line 98. Enter the existing state subsidy per pupil. All projections should be in terms of the present state foundation program.

(7) Line 99. Compute the district foundation program by multiplying the weighted average daily membership (line 92) by the state subsidy per pupil (line 98). Enter this amount here.

(8) Lines 100 and 101. Compute the state share of the district foundation by multiplying the aid ratio (line 97) by the district foundation expenditure (line 99). Enter in line 101. Though the total is not needed in the calculation of the net state instructional subsidy, the local share of the district foundation can be obtained by subtracting line 101 (state share) from line 99 (district foundation) and enter in line 100.

(9) Lines 101-105. Project density and sparsity payments through use of the regular formula for computing such payments with the projected aid ratio or by any other means that is acceptable. Enter projections of density-sparsity payments, poverty programs, make any desired adjustments; add these lines to state share of district foundation (line 101) to obtain the net basic state instructional subsidy.

g. Worksheet #14.5a and #14.5b - As a general matter, projections of state subsidies may be handled (1) by straight-line time trend, (2) by projections of the base and rate factors for specific subsidies (e.g., projected hours of instruction times hourly rate for Homebound Instruction), (3) by an assumed proportion of the projected increase in WADM, and (4) by simple judgment. The discussion below reflects only tentative judgments between these methods for specific subsidies. Knowledge of potential program expansion or termination will always be critical.

(1) Line 106. Use straight-line method if conditions for use of this method are met: judgment if not.

(2) Line 107. Use either straight-line, some projection of anticipated hours of instruction based on percentage increase in weighted average daily membership, or other judgmental effort.

(3) Line 108. Project the fixed base of this subsidy.

(4) Line 109. Straight-line methods would seem inappropriate since reimbursement is primarily a function of actual instructional expense incurred. Use judgment concerning trends in this program.

(5) Line 110. Use personal estimates of the expense components, which are approved transportation, school bus costs, and pupil-days lodging.

(6) Line 111. Include only projected state subsidies; projected federal subsidies should be entered in line 139. Since this subsidy is on a per pupil basis, projections could be attempted by extending the existing proportion of such pupils for the projected weighted average daily membership.

(7) Line 112. Projections of the rental and sinking fund payments is linked to computation of the Capital Account Reimbursement Fraction (CARF) and the Capital Account Reimbursement Quotient (CARQ) and the rules for this computation. Once the reimbursement fraction is determined, with knowledge of the district's capital improvement program, tentative judgmental projections can be made. Receipts should be fairly constant except after new construction; thus straight-line methods may be appropriate in the absence of anticipated capital improvements.

(8) Lines 113-115. If projections can be made of the number of pupils and cost per pupil for each program, these will provide acceptable estimates. Again, an estimate could be made using the projected increase in WADM.

(9) Lines 116, 123, 124, 126, 127, and 129. Receipts should be recorded under federal subsidies at lines 141, 145, 138, 137, and 145 respectively.

(10) Lines 117-119. Projections should be made on the basis of best judgment, reflecting program expansion potential.

(11) Line 123. Record under line 130.

(12) Line 125. Since this account includes Practical Nursing and Vocational Education of the unemployed, projections must be judgmental.

(13) Line 128. Only state reimbursements should be recorded and projected here, the federal reimbursement being recorded at line 144.

(14) Line 129. Only state share of the revenue received under the Manpower Training and Area Redevelopment Act is recorded here, the federal reimbursement being recorded at line 145.

(15) Line 130. Extra grants can be projected only on the basis of continuation of current level of expenditures.

(16) Lines 131 and 132. Line 131 permits adjustments, while 132 is the total of lines 106-131. Line 133 should present the totals from line 105, line 134 is for the sum of lines 132 and 133.

h. Worksheet #14.6: Federal Sources and Subsidies - knowledge of potential program expansion (or termination) and appropriations is critical. Some reliance on state officials may be necessary for information on the expectation and duration of federal grants. Projections can be made only in terms of some assumption about the continued level of expenditures, where possible tied to growth in weighted average daily membership.

(1) Lines 135-149. A generalized basis for projecting is noted above. Line 138, subsidies for handicapped children, should project only modest growth based on the proportion of such children among new

enrollees. Similarly, projected receipts under line 142 should reflect the future growth or contraction of the federal installation(s) creating the increase in such pupils.

(2) Line 150. Enter the sum of lines 135 to 149.

i. Worksheet #14.7: Refunds and Transfer; General Fund Totals

(1) Lines 151-155. Line 151, refunds of prior years may be projected on a straight-line basis if annual receipts suggest that this is appropriate. Lines 152-154 should be projected on the basis of reoccurrence of conditions which previously produced receipts in these accounts. The sum of lines 152-154 should be entered in line 155.

(2) Lines 155-162. Enter sub-totals from previous worksheets. Lines 157, 158, 159, 160, 161 are derived respectively from lines 90, 134, 150, 151, and 155. The sum of lines 157-161 provides the grand total of general fund revenues.

5. Enter revenue yield totals on Form #14, providing one line for each separate account number for which actual and projected receipts are recorded on Worksheets #14.1 to #14.7.

WORKSHEET #14.1: REAL ESTATE TAX PROJECTIONS

Form #14: Revenue Forecast

EDUCATIONAL UNIT:	ACTUAL REVENUE BASE, RATE, AND YIELD EXPERIENCES					PROJECTED REVENUE BASE, RATE, AND YIELD LEVELS				
Revenue Source(s)	Y_{-4}	Y_{-3}	Y_{-2}	Y_{-1}	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
(2011) CURRENT REAL ESTATE TAX										
1.Taxable Assessed Value										
2. x effective rate										
3.Assessed Tax										
4. + penalties										
5.Gross Assessed Tax										
6. - discounts										
7. - exonerations										
8. - liens filed										
9. - returned to county										
10. - not filed or returned										
11. ± adjustment										
12.Sub-Total, Current Real Estate Tax										
13. + (2015) Interim Real Estate Tax										
14.Total, Current and Interim Real Estate Tax										
15.										

WORKSHEET #14.2a: PER CAPITA TAX PROJECTIONS
Form #14: Revenue Forecast

EDUCATIONAL UNIT:	ACTUAL REVENUE BASE, RATE, AND YIELD EXPERIENCE					PROJECTED REVENUE BASE, RATE, AND YIELD LEVELS				
Revenue Source(s)	Y_{-4}	Y_{-3}	Y_{-2}	Y_{-1}	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
(2012) PER CAPITA SECTION 679										
16.Persons Assessed										
17. x effective rate										
18.Assessed Tax										
19. - penalties										
20. ± adjustment										
21.Gross Assessed Tax										
22. - discounts										
23. - exonerations										
24. - not filed as liens or returned to county										
25. ± adjustment										
26.										
27.Sub-Total, Section 679 Per Capita Tax										
28.										
29.										
30.										

WORKSHEET #14.2b: PER CAPITA TAX PROJECTIONS
Form #14: Revenue Forecast

EDUCATIONAL UNIT:	ACTUAL REVENUE BASE, RATE, AND YIELD EXPERIENCE					PROJECTED REVENUE BASE, RATE AND YIELD LEVELS				
Revenue Source (s)	Y_{-4}	Y_{-3}	Y_{-2}	Y_{-1}	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
(2013.1) PER CAPITA, ACT 511										
31.Persons Assessed										
32. x effective rate										
33.Assessed Tax										
34. + penalties										
35. ± adjustment										
36.Gross Assessed Tax										
37. - discounts										
38. - exonerations										
39. - not filed as liens or returned to county										
40. ± adjustment										
41.										
42.Sub-Total, Act 511 Per Capita Tax										
43.Sub-Total, Section 679 Per Capita Tax										
44.Total, Per Capita Taxes										
45.										

WORKSHEET #14.3a: ACT 511 TAXES
Form #14: Revenue Forecast

EDUCATIONAL UNIT:	ACTUAL REVENUE YIELD EXPERIENCE					PROJECTED REVENUE YIELD LEVELS				
Revenue Source(s)	Y_{-4}	Y_{-3}	Y_{-2}	Y_{-1}	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
ACT 511 TAXES, OTHER THAN PER CAPITA										
46. + (2013.2) Wage and Income										
47. + (2013.3) Real Estate Transfer										
48. + (2013.4) Occupation										
49. + (2013.5) Trailer										
50. + (2013.6) Amusements										
51. + (2013.7) Mercantile										
52. + (2013.8) Mechanical Devices										
53. + (2013.9) Other										
54. Total, Act 511 Taxes										
55.										
56.										
57.										
58.										
59.										
60.										

WORKSHEET #14.3b: PAYMENTS IN LIEU OF TAXES

Form #14: Revenue Forecast

EDUCATIONAL UNIT:	ACTUAL REVENUE YIELD EXPERIENCE					PROJECTED REVENUE YIELD LEVELS				
Revenue Source(s)	Y_{-4}	Y_{-3}	Y_{-2}	Y_{-1}	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
(2014) PAYMENTS IN LIEU OF TAXES										
61. + State Forest Lands										
62. + State Game Lands										
63. + Recreational Lands under Project 70										
64. + County Acquisitions										
65.Net Payments in Lieu of Taxes										
66.(2016) Personal Property 1st Class & 1st Class A only										
67.(2017) General Business										
68.(2018) Merc. Licence										
69.(2019) Salary Wage										
70.										
71.										
72.										
73.										
74.										
75.										

WORKSHEET #14.3c: OTHER LOCAL TAXES & TOTALS FOR LOCAL SOURCES
Form #14: Revenue Forecast

EDUCATIONAL UNIT:	ACTUAL REVENUE YIELD EXPERIENCE					PROJECTED REVENUE YIELD LEVELS				
Revenue Source(s)	Y_{-4}	Y_{-3}	Y_{-2}	Y_{-1}	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
OTHER LOCAL SOURCES & TOTALS										
76. + (2020) Delinquent Taxes										
77. + (2030) Tuition and Other Payments										
78. + (2041) Earning on Temporary Deposits										
79. + (2042) Rent on School & Other Facilities										
80. + (2043) Gifts, Bequests, and Endowment										
81. + (2044) Sale of Real Estate & Equipment										
82. + (2049) Misc. Receipts										
83.										
84. + Total, Other Local Sources										
85. + Total, Real Estate Taxes										
86. + Total, Per Capita Taxes										
87. + Total, Act 511 Taxes										
88. + Total, Payments in Lieu of Taxes										
89. + Total, Other Local Sources										
90.(2000) Total Revenue, All Local Sources										

WORKSHEET #14.4: BASIC INSTRUCTIONAL SUBSIDY
Form #14: Revenue Forecast

EDUCATIONAL UNIT:	ACTUAL REVENUE BASE FACTORS AND YIELD EXPERIENCE					PROJECTED REVENUE BASE FACTORS AND YIELD LEVELS				
Revenue Source(s)	Y_{-4}	Y_{-3}	Y_{-2}	Y_{-1}	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
(2111) BASIC INSTRUCTIONAL SUBSIDY										
91.Market Value of Real Property in District										
92. ÷ weighted average daily membership (WADM)										
93.Market Value of Real Property per Pupil										
94. ÷ statewide market value per pupil										
95.State-Local Ratio for District										
96. x.50 = District Share										
97.Aid Ratio										
98.State Subsidy per Pupil										
99.District Foundation										
100. Local Share of District Foundation										
101. State Share of District Foundation										
102. ± density and sparsity payments										
103. + poverty payments										
104. ± adjustment										
105.Net State Instructional Subsidy										

WORKSHEET #14.5a: OTHER STATE SOURCES

Form #14: Revenue Forecast

EDUCATIONAL UNIT:	ACTUAL REVENUE YIELD EXPERIENCE					PROJECTED REVENUE YIELD LEVELS				
Revenue Source(s)	Y_{-4}	Y_{-3}	Y_{-2}	Y_{-1}	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
OTHER STATE SUBSIDIES										
106. + (2114) Exten. Educ. and Recreation										
107. + (2115) Homebound Instruction										
108. + (2116) Closed Schools										
109. + (2121) Spec. Educ.-Exceptional Pupils										
110. + (2123) Trans, Board and Lodging										
111. + (2124) Vocational Education										
112. + (2125) Rental & Sinking Fund Payments										
113. + (2126) Driver Education										
114. + (2127) Medical and Dental Services										
115. + (2128) Nursing Services										
116. + (2129) Record under 2229										
117. + (2131) Migratory Children										
118. + (2132) Sewage Treatment										
119. + (2133) Driver Training										
120.Sub-Total										

WORKSHEET #14.5b: OTHER STATE SOURCES
Form #14: Revenue Forecast

EDUCATIONAL UNIT:	ACTUAL REVENUE YIELD EXPERIENCE					PROJECTED REVENUE YIELD LEVELS				
	Y_{-4}	Y_{-3}	Y_{-2}	Y_{-1}	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
OTHER STATE SUBSIDIES										
121.Sub-Total from 13.5a										
122. + (2140) Record under 2180										
123. + (2151) Record under 2257										
124. + (2152) Record under 2257										
125. + (2153) **Vocat. Trng of Unemployed**										
126. + (2154) Record under 2218										
127. + (2155) Record under 2217										
128. + (2156) Vocational Equip. and Capital Outlay										
129. + **(2157) MP. Trng. and Area Redev. (States Share)**										
130. + (2180) Extra Grants to School Systems										
131. ± adjustment										
132.Sub-Total, Other State Subsidies										
133. + State Instructional Subsidy										
134. **(2100) Total State Sources**										

WORKSHEET #14.6: FEDERAL SOURCES

Form #14: Revenue Forecast

EDUCATIONAL UNIT:	ACTUAL REVENUE YIELD EXPERIENCE					PROJECTED REVENUE YIELD LEVELS				
Revenue Source(s)	Y_{-4}	Y_{-3}	Y_{-2}	Y_{-1}	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
FEDERAL SOURCES 135.(2210) ESEA Title III										
136.(2212) Experimental and Research Projects										
137.(2217) Library Resources ESEA Title II										
138.(2218) Handicapped Children ESEA Title I										
139.(2224) Vocational Ed. NDEA Title VIII										
140.(2226) Driver Education										
141.(2229) Equipment Guidance & Testing (NDEA Title III-IV)										
142.(2240) Impacted Areas										
143.(2255) Adult Basic Ed. 89-750 Title III										
144.(2256) Vocational Ed.-Capital										
145.(2257) Manpower Trng. & Area REDEV 87-415,87-27,89-15.										
146.(2258) Economic Opportunity Act of 1964										
147.(2259) Disadvantaged Children (ESEA Title I)										
148.(2260) Education Profession Development										
149.(2270) Other Federal Programs and Grants										
150.(2200) Total, Federal Subsidies										

WORKSHEET #14.7: REFUNDS & INCOMING TRANSFER ACCOUNTS, REVENUE TOTALS

Form #14: Revenue Forecast

EDUCATIONAL UNIT:	ACTUAL REVENUE YIELD EXPERIENCE					PROJECTED REVENUE YIELD LEVELS				
Revenue Source(s)	Y_{-4}	Y_{-3}	Y_{-2}	Y_{-1}	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
REFUNDS AND TRANSFERS										
151.(2300) Refunds of Prior Years										
152.(2410) Receipts from Member Districts										
153.(2440) Receipts from Penna. Districts										
154.(2450) Receipts from Out-of-State										
155.(2400) Total Incoming Transfers										
156.										
157.(2000) Total Revenue, Local Sources										
158.(2100) Total Revenue, State Sources										
159.(2200) Total Revenue, Federal Sources										
160.(2300) Total Refunds										
161.(2400) Total Incoming Transfers										
162.Total General Funds Revenues										
163.										
164.										
165.										

	ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	REVENUE FORECAST	

Educational Unit:

Fiscal Year Revenue Source	Current Year	Y_1 ____	Y_2 ____	Y_3 ____	Y_4 ____	Y_5 ____

Form #14

Form #15: Financial Feasibility - Final Base Case

1. Fill in the name of your school district.

2. Fill in the estimated total annual cost for the Final Base Case for Current Year (CY) through Y-5. These costs are found on Form #12.

3. Fill in the revenue estimates for Current Year through Y-5. These estimates can be found on Form #14.

4. If a deficit exists in any of the five years (Y-1 through Y-5) calculate the increase required in real estate tax using Worksheet #15.1 Show the increase in rate and money raised for each year from Current Year through Y-5. Surpluses may be carried forward.

	ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	FINANCIAL FEASIBILITY - FINAL BASE CASE

Educational Unit:

Fiscal Year / Final Base Case and Revenue	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Final Base Case Cost						
Revenue Forecast						
(Deficit) or Surplus						
Increased Real Estate Tax - Rate						
Increased Real Estate Tax - Amount Raised						

Comments:

Form #15

WORKSHEET #15.1

Form #15: Financial Feasibility - Final Base Case

Line Number	Calculations	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
1	(Deficit) or Surplus						
2	Revenue per Mill						
3	Collected Revenue per Mill (.97 x Line #2)						
4	(Line #1 / Line #3) /1,000						
5	Real Estate Tax Rate						

Line #5 Directions:

1. If there is a Surplus in Y-1, the Real Estate Tax Rate is the Current Real Estate Tax Rate. If there is a Deficit in Y-1, the Real Estate Tax Rate is the Current Real Estate Tax Rate plus the number in Line #4 under Y-1.

2. For Y-2 through Y-5, the following directions apply: (a) If there is a Surplus in the year in question the Real Estate Tax Rate is the Line #5 Tax Rate for the previous year, (b) if there is a Deficit in the year in question the Real Estate Tax Rate is the larger of (1) the Tax Rate on Line #5 for the previous year or (2) the sum of the Current Real Estate Tax Rate and the number on Line #4 for the year in question.

Report #1: Current Year to Y-5 Final Base Case

This is a comprehensive narrative report that summarizes the Final Base Case. It is presented to the board of school directors by the superintendent of schools. The report should contain a brief explanation of the PPBS procedures leading to this report, discussion of primary objectives, areas of basic concern for the next five years, financial considerations, revenue estimates, present indicator levels, and recommendations concerning desired primary objectives. The format employed in the report will be a matter of personal taste; however, effective communication should be the primary criterion when deciding on a format.

The opening statements should serve to familarize the board with the EPPBS Procedure, particularly the portion leading up to this report. A review and examination of the primary objectives of the school district should be included at this point. Primary objective statements should be concerned with first order or school district wide objectives. These objectives should be expressed as clearly as possible. The set of primary objective statements should include verbal statements of the desired level to be achieved for each indicator.

The review of the primary objectives should be followed by a detailed discussion of the Final Base Case. Particular emphasis should be placed on those aspects of the Final Base Case requiring careful attention during the development of capital improvement and operations project alternatives for the Five Year Plan.

The financial implications of the Final Base Case should be examined along with the revenue estimates. If deficits or surpluses appear in the Final Base Case, these should be discussed in some detail.

The current year's indicator levels and the five year projections of these levels for the Final Base Case should also be covered. This discussion will lead to the recommendations of the superintendent and his staff concerning a new set of primary objectives for the Five Year Plan. Each objective should be stated clearly and concisely. Whenever possible, objectives should be selected that lend themselves to quantitative measurement. The data gathering and data analysis should be specified. Relevant real-world limiting conditions or constraints of time, money, and policy that effect the accomplishment of the recommended objectives should also be detailed.

The objectives should now be discussed in terms of possible alternative courses of action to achieve them. A useful approach for relating the objectives to possible alternative courses of action or alternate projects to achieve these objectives can be developed through a matrix of objectives and related variables. The objectives can be listed on the vertical axis and the variables on the horizontal axis. Only those variables that are presumed to exercise a high degree of influence over whether or not a given objective is to be achieved should be listed.

The considerations and approval of this report and the recommendations concerning new objectives by the board will lead to the development of a Policy Guideline Statement that forms the basis for Report #2.

The following forms provide data input to the report and they can be displayed in the report:

1. Form #2: New Enrollment Forecast
2. Form #6: Calculations and Projections of Indicators for Base Cases - Detail
3. Form #6.1: Calculations and Projections of Indicators for Base Case - Summary
4. Form #8: Capital Improvement Project
5. Form #9: Capital Improvement Project(s) Summary
6. Form #10: Program - Detail
7. Form #10.1: Project - Detail
8. Form #11: Program Review
9. Form #11.1: Project Review
10. Form #12: Final Base Case - Program and Project Summary
11. Form #12.1: Final Base Case - Program Summary
12. Form #13: Manpower Requirements - Final Base Case
13. Form #14: Revenue Forecasts
14. Form #15: Financial Feasibility - Final Base Case

Report #2: Policy Guidelines Statement

This is a narrative report of the results of the board of school directors deliberations concerning Report #1. A copy of this report should be sent to each board member and designated staff members. The same concerns regarding format discussed in the instructions to Report #1 also apply for this report, i.e., the format should be mainly dictated by a desire to communicate clearly and concisely.

The background leading up to the development of this report should be briefly discussed. This discussion will serve to reacquaint the board and staff with the EPPBS procedures leading to this report and with the relevant facts contained in Report #1. A copy of Report #1 should be attached as an addendum to this report.

A restatement of the primary objectives should be made at this point with any changes that have grown out of the board's deliberations. The rationale for these changes should be explained and any pertinent data used to support the rationale should be provided. This report forms the basis for developing the Five Year Plan because it defines the primary objectives of the school district and the "real-world" limiting conditions or constraints which must be satisfied if the objectives are to be attained.

Form #16: Operations Project Alternative - Proposed and
Form #16.1: Capital Improvement Project - Proposed

1. Follow the procedure outlined below in filling out Form #16, using a separate copy of the form for each individual proposed project.

   a. Fill in the name of your school district, title of the project, and the name of the project manager.

   b. Circle the indicator(s) influenced by the project. In addition, recalculate or re-estimate the indicators influenced, using the procedure outlined under Form #6, and record the results on an equivalent of Worksheet #6.13.

   c. The costs for the proposed operations project must be calculated for Y-1 through Y-5. You may use the projection procedures employed in developing the Final Base Case costs or you may calculate the exact costs for each year by program and project. Use a copy of Worksheet #16.1 to record the calculations for additional Salary (S), Non-Salary (NS), Capital Outlay (CO), and Debt Service (DS) costs for each program and project affected by the proposed operations project. Keep a count of new personnel to be added as a result of proposed operations projects for recording later on Worksheet #19.2. Record the parameter values, i.e., pupil-personnel ratios and compound inflation rates, used to calculate these costs in the space below the program or project name and opposite the S, NS, CO, or DS line. Add these figures together and transfer the sums to the Project Costs Section.

   d. Write the main objective for the project.

   e. Write a comprehensive, and accurate description of the project. The description should contain the following:

      (1) A concise general description of the project and a listing of all programs and projects affected;

      (2) Clientele to be served by the project;

      (3) Number of professional and non-professional staff members by manpower category (see Form #13) to be employed in the project;

    (4) Plant to be committed to the project;

    (5) Description of the methods, procedures and techniques used to execute and control the project; and

    (6) Parameter values used in projecting the expenditures for the project.

  f. Show reductions in total annual operating costs because of support from Federal, State, or other sources. These amounts must be transferred to a copy of Form #18.

2. Use the following procedure to complete Form #16.1, using a separate copy of the form for each individual proposed project.

  a. Fill in the information called for in Boxes 1, 2, and 3.

  b. Write a brief description of the proposed plant, its proposed location, number of pupils to be serviced, size of the proposed staff, and programs and projects affected by its construction. Briefly describe the need for the plant.

  c. The costs for the proposed capital improvement project must be calculated for all years the project will have an impact on expenditures from Y-1 through Y-5. You may use the projection procedures employed in Form #8 or you may calculate the exact cost for each year by program and project. Keep a count of new personnel to be added as a result of proposed capital improvement projects for recording later on Worksheet #19.2. Use a copy of Worksheet #16.1 to record the calculations for additional S, NS, CO, and DS costs for each program and project affected by the capital improvement project. Record the parameter values used to calculate these costs in the space below the program or project name and opposite the S, NS, CO, or DS line. Transfer these figures by program and project to the Added Major Program Section.

  d. Show reductions in total Added Annual Operating Cost as a result of support from Federal, State, or other sources. These amounts must be transferred to a copy of Form #18.

	FIVE-YEAR PLAN	OPERATIONS PROJECT ALTERNATIVE - PROPOSED	

Educational Unit:	Project Title:	Project Manager:

Related Indicators:

1 2 3 4 5 6 7 8 9 10 11 12

Fiscal Year / Project Costs	Y_1	Y_2	Y_3	Y_4	Y_5
Salary					
Non-Salary					
Capital Outlay					
Debt Service					
Total Added Annual Operating Cost					

Fiscal Year / Revenue Related to Added Operating Costs	Y_1	Y_2	Y_3	Y_4	Y_5
Less - Federal					
Less - State					
Less - Other					
Total Revenue Related to Added Operating Cost (Transfer to Form # 18)					

Project Objective:

Project Description:

Form #16

FIVE-YEAR PLAN	CAPITAL IMPROVEMENT PROJECT ALTERNATIVE - PROPOSED

1. Project Title & Location

2. Project #

3. New Project? Yes ☐ No ☐
Revised Request Yes ☐ No ☐
In Long Range Plan? Yes ☐ No ☐
Priority No. ____ of ____
Estimated Useful Life ______ Yrs.
Date Begin? ______________
Date Complete? ______________
Number of Students in First Year? ______________
Estimated Construction Cost? $ ______________
Number of Standard Classrooms ______________

4. Description & Justification

6. Added Major Program	Y_1	Y_2	Y_3	Y_4	Y_5
TOTAL ADDED ANNUAL OPERATING COST					

7. Revenue Related to Added Operating Costs	Y_1	Y_2	Y_3	Y_4	Y_5
Less - Federal					
Less - State					
Less - Other					
TOTAL REVENUE RELATED TO ADDED OPERATING COST (Transfer to Form #18)					

Form #16.1

WORKSHEET #16.1

Forms #16 and #16.1 - Operations and Capital Improvement Project Alternative - Proposed

Program	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coordinative Program Area Policy & Executive	S						
	NS						
	CO						
	DS						
	T						
Comprehensive Planning	S						
	NS						
	CO						
	DS						
	T						
Information & Liaison	S						
	NS						
	CO						
	DS						
	T						
Community Services	S						
	NS						
	CO						
	DS						
	T						
Coordinative Support Ser.	S						
	NS						
	CO						
	DS						
	T						
Instructional Program Area Early Childhood Instruction	S						
	NS						
	CO						
	DS						
	T						
Elementary Instruction	S						
	NS						
	CO						
	DS						
	T						
Secondary Instruction	S						
	NS						
	CO						
	DS						
	T						

Program	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Voc.-Tech. Instruction	S						
	NS						
	CO						
	DS						
	T						
Special Instruction	S						
	NS						
	CO						
	DS						
	T						
Continuing Instruction	S						
	NS						
	CO						
	DS						
	T						
Instructional Supp. Ser.	S						
	NS						
	CO						
	DS						
	T						
Health Program Area Nursing	S						
	NS						
	CO						
	DS						
	T						
Medical	S						
	NS						
	CO						
	DS						
	T						
Dental	S						
	NS						
	CO						
	DS						
	T						
Psychological	S						
	NS						
	CO						
	DS						
	T						
Health Support Services	S						
	NS						
	CO						
	DS						
	T						

Page 2 of 4

Worksheet #16.1

Program	Cat.	Fiscal Year					
		Current Year	Y_1 ___	Y_2 ___	Y_3 ___	Y_4 ___	Y_5 ___
Business Program Area General Services	S						
	NS						
	CO						
	DS						
	T						
Pupil Transportation	S						
	NS						
	CO						
	DS						
	T						
Food Services	S						
	NS						
	CO						
	DS						
	T						
Facilities	S						
	NS						
	CO						
	DS						
	T						
Fixed Charges	S						
	NS						
	CO						
	DS						
	T						
Business Support Services	S						
	NS						
	CO						
	DS						
	T						
Total							

Worksheet #16.1

Page 3 of 4

Project	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
	S						
	NS						
	CO						
	DS						
	T						
	S						
	NS						
	CO						
	DS						
	T						
	S						
	NS						
	CO						
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	T						

Form #17: Proposed Operations and Capital Improvement Project Alternatives - Summary

1. Fill in the name of your school district.

2. List the school district's primary objectives. These objectives are enumerated in Report #2. The objectives should be ranked from the most preferred to the least preferred. Place the rank order number in the column marked RO.

3. Assign a number to each Operations and Capital Improvement Project Alternative and place the number of each alternative in the cell at the top of each column.

4. Check off under each program the objectives you believe it will affect. Most programs will affect more than one objective.

5. Scan the form and develop Alternative Project Sets. Assign a capital letter to each Alternative Project Set. Record each set on a copy of Form #19 along with the total cost for each Project Alternative from Y-1 through Y-5. These Alternative Project Sets when combined with the Final Base Case program and projects form the Alternative Program and Project Sets. Each Alternative Program and Project Set is examined separately to determine which set will achieve the primary objectives within the constraints that are spelled out in Report #2.

	FIVE YEAR PLAN	PROPOSED PROJECT ALTERNATIVES - SUMMARY	

Educational Unit:

Objectives	R O	Project Alternative									
		#	#	#	#	#	#	#	#	#	#

Form #17

Form #18: Confirmed Revenue Forecast

1. Fill in the name of your school district.
2. This forecast of revenues should be the most reliable forecast you can secure before you begin the process of selecting the "best" feasible alternative set of programs and projects. Review the forecast shown on Form #14 and update where necessary.
3. Examine the separate copies of Form #18 that show the total additional revenues that may be realized from proposed operations and capital improvement project alternatives for accuracy. The additional revenues will be shown on copies of Form #19 that contain those proposed project alternatives that will bring in the additional revenues.

	FIVE YEAR PLAN	CONFIRMED REVENUE FORECAST

Educational Unit:

Fiscal Year Revenue Source	Current Year	Y_1 ____	Y_2 ____	Y_3 ____	Y_4 ____	Y_5 ____

Form #18

Form #19: Proposed Alternative Program and Project Set

1. Fill in the name of your school district.

2. A form is filled out for each Alternative Program and Project Set. A set consists of any feasible combination of project alternatives plus the Final Base Case programs and projects. The Superintendent develops these sets on the basis of staff consultation and his own knowledge of the school district.

3. Assign capital letters to the sets as they are assembled. Place this letter in the Alternative Program and Project Set Box.

4. Rank the program sets and place the rank order number in the appropriate box.

5. Enter the total Final Base Case program and project costs for the Current Year through Y-5. This information can be found on Form #12.

6. Enter the Confirmed Revenue Forecast figures for the same years. This data can be found on Form #18.

7. Derive the difference between the Final Base Case costs and the Confirmed Revenue Forecast figures. If the costs exceed the revenue figures shown the deficit. If the costs are less than the anticipated revenue show the surplus. A surplus may be carried forward.

8. Record each project alternative in the set. Show the added cost above the Final Base Case cost for Y-1 through Y-5 for each project alternative. Add the costs for all project alternatives from Y-1 through Y-5. If a given project alternative will reduce annual operating costs, place an asterisk (*) beside the project's name and the yearly grand totals for all project alternatives affected by the reduction in costs.

9. Add all of the additional revenues that would be realized from the project alternatives. Enter the totals for Y-1 through Y-5 in the cells opposite Total Additional Project Revenues. Subtract the additional revenue figures from the total costs of all project alternatives for each year from Y-1 through Y-5. Show the deficits and surpluses. Surpluses will result from those projects that are designed to reduce operating costs.

10. Add the Final Base Case and project alternative deficits and surpluses together for each year.

11. Calculate the financial feasibility in terms of the Real Estate Tax Rate of the Proposed Alternative Program and Project Set by using Form #20 and Worksheet #20.1. The Real Estate Tax Rate and/or other revenue alternatives that are necessary to balance the operating costs should be shown by rate for Y-1 through Y-5 on Form #19 in the Revenue Alternative Section.

12. Record the Indicators influenced by the Alternative Program and Project Set and their projected levels for each year. In addition, recalculate or re-estimate the indicators influenced. The Final Base Case levels of these indicators will have to be adjusted to accommodate for the changes caused by the project alternatives. Worksheet #19.1 is provided for this purpose. The Final Base Case levels can be found on Form #6; the new indicator levels for individual operations project alternatives and capital improvement project alternatives can be found on Forms #16 and #16.1. The project alternatives must be calculated in accordance with the procedures outlined for Form #25.

13. Worksheet #19.2 is provided for the purpose of examining and recording the manpower requirements for the Alternative Program and Project Set. The data on Form #13 for the Final Base Case should be combined with the additional manpower requirements used in arriving at the salary data shown on Forms #16 and #16.1. (See Worksheet #16.1 for each project.) Be sure to reduce the Final Base Case requirements if one or more of the project alternatives requires such an adjustment.

14. You will eventually select the "best" Alternative Program and Project Set from the feasible sets you have examined. This set will contain the maximum number of high priority project alternatives and the programs and projects of the Final Base Case that will achieve the primary objectives of the school district within the real-world limiting conditions specified in Report #2. The "best" Alternative Program and Project Set form the basis for the new Five-Year Plan spelled out in Report #3.

15. Incorporate the additional revenues realized through the preferred project alternatives and the preferred revenue alternatives into the Revenue Forecast on Form #27.

FIVE YEAR PLAN

PROPOSED ALTERNATIVE PROGRAM AND PROJECT SET

Educational Unit:

Alternative Program and Project Set:

Rank Order Number:

Final Base Case Cost and Revenue Estimate	Fiscal Year					
	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Final Base Case Cost						
Confirmed Revenue Forecast						
(Deficit) or Surplus						
Operations & Cap. Imp. Project Alternatives						
Total Added Annual Operating Cost						
Total Additional Project Revenues						
(Deficit) or Surplus						
Total (Deficit) or Surplus						
Fiscal Year Revenue Alternative	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5

Form #19

WORKSHEET #19.1

FORM #19 - Proposed Alternative Program and Project Set

Fiscal Year / Indicator	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5

WORKSHEET #19.2

FORM #19 - Proposed Alternative Program and Project Set

Fiscal Year	Current Year	Y_1		Y_2		Y_3		Y_4		Y_5	
Position	Number Employed	NP	ST	NP	ST	NP	ST	NP	ST	NP	ST
Professional Admn.											
Superintendent											
Asst. Supt., Bus.											
Asst. Supt., Ed.											
H. S. Principal											
Jr. H. S. Prin.											
Elementary Prin.											
Directors											
Coordinators											
Asst. Prin.											
Other											
Professional Inst.											
Elementary											
Grades 1-3											
Grades 1-6											
Secondary											
Math											
Social Sciences											
Physical Sci.											
Lang. Arts											
Foreign Lang.											
Data Processing											
Other											
Inst. Specialists											
Art											
Music											
Reading											
Librarian											
Physical Ed.											
Guidance											
Nurses											
Psychologist											
Special Ed.											
Teachers Aid											
Other											
Collateral Services											
Clerical											
Operation											
Maintenance											
Bus Drivers											
Food Service											
Other											
Total to be Hired		+		+		+		+		+	
Total Staff Required											

Form #19

Form #20: Financial Feasibility - Proposed Alternative Program and Project Set

1. Fill in the name of your school district.

2. Add the Final Base Case costs to the total added annual operating costs for all proposed project alternatives for Y-1 through Y-5 and enter the totals in the appropriate cells.

3. Add the Confirmed Revenue Forecast figures to the figures for all additional revenues from project alternatives and enter the totals in the appropriate cells.

4. Derive the deficits or surpluses for each year.

5. Use Worksheet #20.1 to calculate the financial feasibility of the Proposed Alternative Program and Project Set.

FIVE-YEAR PLAN	**FINANCIAL FEASIBILITY - PROPOSED ALTERNATIVE PROGRAM AND PROJECT SET**

Educational Unit:

Set Costs and Revenue / Fiscal Year	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Combined Final Base Case and Project Alternative Costs						
Combined Final Base Case and Project Revenues Alternatives						
(Deficit) or Surplus						
Increased Real Estate Tax - Rate						
Increased Real Estate Tax - Amount Raised						

Form #20

WORKSHEET #20.1

FORM #20: Financial Feasibility - Proposed Alternative Program and Project Set

Line Number	Calculations	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
1	(Deficit) or Surplus						
2	Revenue per Mill						
3	Collected Revenue per Mill (.97 x Line #2)						
4	(Line #1 / Line #3) /1,000						
5	Real Estate Tax Rate						

Line #5 Directions:

1. If there is a Surplus in Y-1, the Real Estate Tax Rate is the Current Real Estate Tax Rate. If there is a Deficit in Y-1, the Real Estate Tax Rate is the Current Real Estate Tax Rate plus the number in Line #4 under Y-1.

2. For Y-2 through Y-5, the following directions apply: (a) If there is a Surplus in the year in question the Real Estate Tax Rate is the Line #5 Tax Rate for the previous year, (b) if there is a Deficit in the year in question the Real Estate Tax Rate is the larger of (1) the Tax Rate on Line #5 for the previous year or (2) the sum of the Current Real Estate Tax Rate and the number on Line #4 for the year in question.

Form #21: Capital Improvement Project

1. If no changes have taken place on capital improvement projects approved previously and shown in the Final Base Case, transfer the information from Form #8 to this form. If changes have taken place, please note them on this form and list any changes in parameter values used to recalculate expenditures.

2. Transfer all information forward from Form #16.1 on the capital improvement project alternative(s) that have been selected as part of the Five-Year Plan to this form.

3. Transfer all added revenue to Form #27: Revenue Forecast.

FIVE - YEAR PLAN	CAPITAL IMPROVEMENT PROJECT

1. Project Title & Location

2. Project

3. New Project? Yes ☐ No ☐
Revised Request Yes ☐ No ☐

In Long Range Plan? Yes ☐ No ☐

Priority? No. ____ of ____

Estimated Useful Life ______ Yrs.

Date Begin? ____________

Date Complete? ____________

Number of Students in First Year? ____________

Estimated Construction Cost? $____________

Number of Standard Classrooms ____________

4. Description & Justification

6. Added Major Program	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
TOTAL ADDED ANNUAL OPERATING COST						

7. Revenue Related to Added Operating Costs	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Less - Federal						
Less - State						
Less - Other						
TOTAL REVENUE RELATED TO ADDED OPERATING COST (Transfer to Form #27)						

Form #21

Form #22: Capital Program Summary

1. Fill in the name of your school district.
2. Transfer the data from Form #21. If more than one capital improvement is involved combine the data by program.

FIVE-YEAR PLAN	CAPITAL IMPROVEMENT PROJECT(S) - SUMMARY	

Educational Unit:

Fiscal Year Project	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coordinative Program Area						
Policy & Executive						
Comprehensive Planning						
Information & Liaison						
Community Services						
Coordinative Support Ser.						
Annual Added Cost						
Instructional Program Area						
Early Childhood Instr.						
Elementary Instruction						
Secondary Instruction						
Voc.-Tech. Instruction						
Special Instruction						
Continuing Instruction						
Instr. Support Services						
Annual Added Cost						
Health Program Area						
Nursing						
Medical						
Dental						
Psychological						
Health Support Services						
Annual Added Cost						
Business Program Area						
General Services						
Pupil Transportation						
Food Services						
Facilities						
Fixed Charges						
Business Support Services						
Annual Added Cost						
Total Annual Added Cost						

Form #22

Form #23: Program - Detail and
Form #23.1: Project - Detail

1. Use the following procedure to complete Form #23.

   a. If the information is unchanged transfer the information from Form #10 to this form. If new projections have been made that alter the expenditure pattern for the program, describe these changes and record the parameter values employed in making the projections under the program description section.

   b. Fill in the name of your school district.

   c. Fill in the name of the Program Area, Program, and Program Manager. A form should be filled out for each program. You may fill out a form for each subprogram falling under this program.

   d. Circle the indicator(s) influenced by the program.

   e. In most cases, the box marked Continuing should be checked. However, it is possible that a program was begun last year or was instituted this year. Check the box marked Tentative in the former case or the box marked New in the latter case.

   f. List the primary objective for the program. Express the objective as clearly as possible and in a manner that will facilitate measurement of progress toward it.

   g. Write a comprehensive description of the program. The description should contain the following:

      (1) Concise, general description of the content of the program and a listing of all related subprograms;

      (2) Clientele served by the program;

      (3) Number of professional and non-professional staff members by manpower category (see Form #13) employed in the program;

      (4) Plant committed to the program;

      (5) Description of the methods, procedures and techniques used to execute and control the program; and

(6) Parameter values used in projecting the expenditures for the program.

2. Follow the procedure below to complete Form #23.1.

   a. If the information is unchanged for operations projects that are established and recorded in the Final Base Case, transfer the information forward from Form #10.1 to Form #23.1. Capital improvement projects' information that is unchanged may also be transferred from Form #8 to Form #21. Please note any changes in the projected expenditure pattern and parameter values employed in the projections.

   b. The data from the operations project alternatives selected as part of the "best" Alternative Program and Project Set should be transferred from Form #16 to Form #23.1. Data on preferred capital improvement project alternative(s) has been transferred from Form #16.1 to Form #21.

   c. Complete the form according to the instructions outlined for Form #23. Include additional revenues realized through the project in the appropriate spaces. Transfer the additional revenue information to Form #27: Revenue Forecast.

	FIVE-YEAR PLAN	PROGRAM - DETAIL	

Educational Unit:	Program Area:	Program:	Program Manager:
Subprogram:	Related Indicators: 1 2 3 4 5 6 7 8 9 10 11 12		Continuing ☐ Tentative ☐ New ☐

Fiscal Year Program Costs	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Salary						
Non-Salary						
Capital Outlay						
Debt Service						
Total Annual Cost						

Program Objective:

Program Description

Form #23

FIVE - YEAR PLAN		PROJECT - DETAIL
Educational Unit:	Project Title:	Project Manager:
Related Indicators: 1 2 3 4 5 6 7 8 9 10 11 12		Continuing ☐ Tentative ☐ New ☐

Project Costs / Fiscal Year	Y_1	Y_2	Y_3	Y_4	Y_5
Salary					
Non-Salary					
Capital Outlay					
Debt Service					
Total Annual Cost					

Revenue Related to Annual Operating Costs / Fiscal Year	Y_1	Y_2	Y_3	Y_4	Y_5
Less - Federal					
Less - State					
Less - Other					
Total Revenue Related to Added Operating Cost (Transfer to Form #27)					

Project Objective:

Project Description:

Form #23.1

Form #24: Program and Project Summary and Form #24.1: Program Summary

1. Follow the directions below to complete Form #24:

   a. Fill in the name of your school district.

   b. Transfer the totals forward from Forms #21, #23 and #23.1 to Worksheet #24.1. Add the Salary (S), Non-Salary (NS), Capital Outlay (CO), and Debt Service (DS) for each program and project transfer the totals to Form #24.

2. Merge the operations and capital improvement project costs with the costs for the twenty-three basic programs on a second copy of Worksheet #24.1 and transfer the totals to Form #24.1. This form is useful in presenting the general five-year expenditure patterns to the school board and the public.

WORKSHEET #24.1

Forms #24 and 24.1 - Program and Project Summary

Program	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coordinative Program Area Policy & Executive	S						
	NS						
	CO						
	DS						
	T						
Comprehensive Planning	S						
	NS						
	CO						
	DS						
	T						
Information & Liaison	S						
	NS						
	CO						
	DS						
	T						
Community Services	S						
	NS						
	CO						
	DS						
	T						
Coordinative Support Ser.	S						
	NS						
	CO						
	DS						
	T						
Instructional Program Area Early Childhood Instruction	S						
	NS						
	CO						
	DS						
	T						
Elementary Instruction	S						
	NS						
	CO						
	DS						
	T						
Secondary Instruction	S						
	NS						
	CO						
	DS						
	T						

Program	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Voc.-Tech. Instruction	S						
	NS						
	CO						
	DS						
	T						
Special Instruction	S						
	NS						
	CO						
	DS						
	T						
Continuing Instruction	S						
	NS						
	CO						
	DS						
	T						
Instructional Supp. Ser.	S						
	NS						
	CO						
	DS						
	T						
Health Program Area Nursing	S						
	NS						
	CO						
	DS						
	T						
Medical	S						
	NS						
	CO						
	DS						
	T						
Dental	S						
	NS						
	CO						
	DS						
	T						
Psychological	S						
	NS						
	CO						
	DS						
	T						
Health Support Services	S						
	NS						
	CO						
	DS						
	T						

Program	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Business Program Area							
General Services	S						
	NS						
	CO						
	DS						
	T						
Pupil Transportation	S						
	NS						
	CO						
	DS						
	T						
Food Services	S						
	NS						
	CO						
	DS						
	T						
Facilities	S						
	NS						
	CO						
	DS						
	T						
Fixed Charges	S						
	NS						
	CO						
	DS						
	T						
Business Support Services	S						
	NS						
	CO						
	DS						
	T						
Total							

Project	Cat.	Fiscal Year					
		Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
	S						
	NS						
	CO						
	DS						
	T						
	S						
	NS						
	CO						
	DS						
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Worksheet #24.1

FIVE - YEAR PLAN	PROGRAM AND PROJECT SUMMARY	

Educational Unit:

Fiscal Year / Program	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coordinative Program Area Policy & Executive						
Comprehensive Planning						
Information & Liaison						
Community Services						
Coordinative Support Ser.						
Annual Cost						
Instructional Program Area Early Childhood Instr.						
Elementary Instruction						
Secondary Instruction						
Voc.-Tech. Instruction						
Special Instruction						
Continuing Instruction						
Instr. Support Services						
Annual Cost						
Health Program Area Nursing						
Medical						
Dental						
Psychological						
Health Support Services						
Annual Cost						
Business Program Area General Services						
Pupil Transportation						
Food Services						
Facilities						
Fixed Charges						
Business Support Ser.						
Annual Cost						
Program Total Annual Cost						

Form #24

Page 1 of 2

	FIVE - YEAR PLAN	PROGRAM AND PROJECT SUMMARY

Educational Unit:

Fiscal Year Project	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Project Total Annual Cost						
Program and Project Total Annual Cost						
Capital Improvement Project(s) Total Annual Cost						

Form #24

5

Page 2 of 2

ANALYSIS AND SUMMARIZATION - FINAL BASE CASE	PROGRAM SUMMARY	

Educational Unit:

Fiscal Year / Program	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5
Coordinative Program Area						
Policy & Executive						
Comprehensive Planning						
Information & Liaison						
Community Services						
Coordinative Support Ser.						
Annual Cost						
Instructional Program Area						
Early Childhood Instr.						
Elementary Instruction						
Secondary Instruction						
Voc.-Tech. Instruction						
Special Instruction						
Continuing Instruction						
Inst. Support Services						
Annual Cost						
Health Program Area						
Nursing						
Medical						
Dental						
Psychological						
Health Support Services						
Annual Cost						
Business Program Area						
General Services						
Pupil Transportation						
Food Services						
Facilities						
Fixed Charges						
Business Support Ser.						
Annual Cost						
Total Annual Cost						

Form #24.1

Form #25: Calculations and Projections of Indicators - Detail and Form #25.1: Calculations and Projections of Indicators - Summary

1. Forms #25 and #25.1 have been provided for you to record the indicator levels. You can plot a single indicator on Form #25 or plot all the indicators on Form #25.1. A finer scale can be used for Form #25 than for Form #25.1. Form #25 is useful in studying a single indicator. Form #25.1 enables you to see the gross trends of all the indicators at one glance.

2. Each graph must show three projections: (a) transfer the Current Year through Y-5 plots shown on Forms #6 and #6.1; (b) plot the Y-1 through Y-5 Desired Levels incorporated in Report #2; and (c) plot the Y-1 through Y-5 Expected Levels according to the steps outlined on the worksheets listed below. Record the Expected Level for each indicator on Worksheet #25.13.

   a. Indicator # 1 - Worksheet #25.1
   b. Indicator # 2 - Worksheet #25.2
   c. Indicator # 3 - Worksheet #25.3
   d. Indicator # 4 - Worksheet #25.4
   e. Indicator # 5 - Worksheet #25.5
   f. Indicator # 6 - Worksheet #25.6
   g. Indicator # 7 - Worksheet #25.7
   h. Indicator # 8 - Worksheet #25.8
   i. Indicator # 9 - Worksheet #25.9
   j. Indicator #10 - Worksheet #25.10
   k. Indicator #11 - Worksheet #25.11
   l. Indicator #12 - Worksheet #25.12

3. Plot the indicator levels for the Current, Desired, and Expected levels on Forms #25 and #25.1.

WORKSHEET #25.1

Forms #25 and #25.1: Calculations and Projections of Indicators - Detail and Summary

Directions for Calculating Indicator #1

Excess Enrollment (EE) - Defined as total average daily membership in the district minus the total classroom capacity.

Step 1

Record below the ADM from Form #2.

Y-1__________ Y-3__________
Y-2__________ Y-4__________
Y-5__________

Step 2

Record below the total number of standard academic classroom (TNSAC) figure (Current Level) from Worksheet #6.1:

TNSAC__________

Step 3

Record below the total number of standard academic classrooms added (ACA) because of the selected capital improvement project alternatives that are to be incorporated in the new Five-Year Plan and add these data to the total number of classrooms available the previous year.

		CY	Y-1	Y-2	Y-3	Y-4	Y-5
CY	TNSAC	____	____				
Y-1	ACA		+____				
Y-1	TNSAC		____	____			
Y-2	ACA			+____			
Y-2	TNSAC			____	____		
Y-3	ACA				+____		
Y-3	TNSAC				____	____	
Y-4	ACA					+____	
Y-4	TNSAC					____	____
Y-5	ACA						+____
Y-5	TNSAC						____

Step 4

Calculate the total classroom capacity (TCC) by multiplying the TNSAC by 25 pupils per classroom.

	Y-1	Y-2	Y-3	Y-4	Y-5
TNSAC					
	x25	x25	x25	x25	x25
TCC	____	____	____	____	____

Step 5

Subtract TCC from ADM for Y-1 through Y-5 to derive the excess enrollment (EE) for each year.

	Y-1	Y-2	Y-3	Y-4	Y-5
ADM	____	____	____	____	____
TCC	____	____	____	____	____
EE (+ or -)	____	____	____	____	____

Step 6

Record these data on Worksheet #25.13.

WORKSHEET #25.2

Forms #25 and #25.1: Calculations and Projections of Indicators - Detail and Summary

Directions for Calculating Indicator #2

Classroom Teachers Per 1000 Weighted Pupils (CTWP) - Defined as total number of classroom teachers in the district divided by the total weighted enrollment, times 100.

Note:

1. The classroom teacher is defined as a member of the professional staff who spends at least half-time in a regular classroom assignment. Count a classroom teacher as 0.5 (50 percent of time), 0.75 (75 percent of time), or 1.0 (100 percent of time).

Step 1

Record below the total weighted enrollment-staff (TWE-S) from Form #2:

Y-1__________
Y-2__________
Y-3__________
Y-4__________
Y-5__________

Step 2

Record below the total number of classroom teachers (TNCT) from Forms #21, #23, and #23.1 (check these figures against those on Form #26):

	Y-1	Y-2	Y-3	Y-4	Y-5
TNCT	___	___	___	___	___

Step 3

Use the following formula to derive the classroom teachers per 1000 weighted pupils (CTWP) for eacy year:

(TNCT / TWE-S) x 1000 = CTWP

Y-1 (____ / _____) x 1000 = ________

Y-2 (____ / _____) x 1000 = ________

Y-3 (____ / _____) x 1000 = ________

Y-4 (____ / _____) x 1000 = ________

Y-5 (____ / _____) x 1000 = ________

Step 4

Record these data on Worksheet #25.13.

WORKSHEET #25.3

Form #25 and #25.1: Calculations and Projections of Indicators - Detail and Summary

Directions for Calculating Indicator #3

Mean Cumulative Course Offerings - Grades 7-12 (MCCO) - Defined as total number of courses for grades 7 through 12 of 200 minutes per week.

Note:

1. Review the procedure outlined in the instructions for Worksheet #4.3. The level of this indicator will remain constant from CY through Y-5 in the absence of specific information concerning additions or changes to the secondary curriculum.

Step 1

Record below the Current Level mean cumulative course offerings (MCCO) for grades 7-12 from Worksheet #6.3:

MCCO__________

Step 2

Record below any changes in the MCCO for each year:

		CY	Y-1	Y-2	Y-3	Y-4	Y-5
CY	MCCO	___	___				
Y-1	Changes		___				
Y-1	MCCO		___	___			
Y-2	Changes			___			
Y-2	MCCO			___	___		
Y-3	Changes				___		
Y-3	MCCO				___		
Y-4	Changes					___	
Y-4	MCCO					___	___
Y-5	Changes						___
Y-5	MCCO						___

Step 3

Record these data on Worksheet #25.13.

WORKSHEET #25.4

Form #25 and #25.1: Calculations and Projections of Indicators - Detail and Summary

Directions for Calculating Indicator #4

Professional Instructional Specialists per 1000 Weighted Pupils (PISWP) - Defined as total number of instructional specialists in the district divided by the total weighted enrollment, times 1000.

Note:

1. The following specialists who supplement or support the professional classroom teacher are included: art (elementary), music (elementary), reading, speech correction, librarian, audio-visual, guidance, health (nurses), psychologists, helping teachers, and others. Count a specialist as 1 only if he spends 100 percent of his time in his field of specialization, otherwise, count him as 0.5 (50 percent of time), 0.75 (75 percent of time), or 0.8 (80 percent of time).

Step 1

Record below the total weighted enrollment start (TWE-S) from Form #2:

Y-1__________ Y-3__________
Y-2__________ Y-4__________
Y-5__________

Step 2

Record below the total number of professional instructional specialists (TNPIS) from Form #13; add to this number the professional instructional specialists added (PISA) because of operations and capital improvement projects shown on Forms #21, #23, and #23.1 (check these figures against those on Form #26):

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
TNPIS	___	___	___	___	___	___
PISA	+___	+___	+___	+___	+___	+___
Total	___	___	___	___	___	___

Step 3

Use the following formula to derive the professional instructional specialists per 1000 weighted pupils (PISWP) for each year:

(TNPIS / TWE-S) x 1000 = PISWP

Y-1 (______/_______) x 1000 = _______

Y-2 (______/_______) x 1000 = _______

Y-3 (______/_______) x 1000 = _______

Y-4 (______/_______) x 1000 = _______

Y-5 (______/_______) x 1000 = _______

Step 4

Record these data on Worksheet #6.13.

WORKSHEET #25.5

Form #25 and #25.1: Calculations and Projections of Indicators - Detail and Summary

Directions for Calculating Indicator #5

Total Dollar Expenditures for Curriculum Materials, Supplies, and Library Books Per Weighted Pupil (TDEMWP) - Defined as the total dollars allocated in the current budget for curriculum materials, supplies, and library books divided by the total weighted enrollment.

Note:

1. This indicator does not include expenditures for text books and teaching materials absolutely essential for classroom instruction. Only use expenditures from Account Numbers 0223, 0224, and 0229. (Only use items from 0229 account if they are supplementary curriculum materials or supplies.)

Step 1

Record below the total weighted enrollment-finance (TWE-F) from Form #2:

Y-1__________ Y-3__________
Y-2__________ Y-4__________
Y-5__________

Step 2

Record below the total dollars (TD) expended from Worksheet #24.1 for Y-1 through Y-5:

	Y-1	Y-2	Y-3	Y-4	Y-5
TD	___	___	___	___	___

Step 3

Use the following formula to derive the total dollar expenditures for curriculum materials, supplies, and library books per weighted pupil (TDEMWP) for each year:

TD / TWE = TDEMWP

Y-1 ____/_____ = ______
Y-2 ____/_____ = ______
Y-3 ____/_____ = ______
Y-4 ____/_____ = ______
Y-5 ____/_____ = ______

Step 5

Record these data on Worksheet #25.13.

WORKSHEET #25.6

Form #25 and #25.1: Calculations and Projections of Indicators - Detail and Summary

Directions for Calculating Indicator #6

Net Total Expenditures Per Weighted Pupil (NTEWP) - Defined as the net total expenditures divided by the total weighted enrollment.

Note:

1. Subtract tuition payments to in-state and out-of-state school systems, districts, jointures, or institutions (Account Number 1481, 1482, 1483, 1484, 1485, 1486, 1487 and 1488) from the total expenditures figure shown on Worksheet #24.1 to determine the net total expenditures (NTE).

Step 1

Record below the total weighted enrollment-finance (TWE-F) from Form #2:

	CY	Y-1	Y-2	Y-3	Y-4	Y-5
TWE-F	___	___	___	___	___	___

Step 2

Record below the net total expenditures (NTE) from Worksheet #24.1 for Y-1 through Y-5:

	Y-1	Y-2	Y-3	Y-4	Y-5
NTE	___	___	___	___	___

Step 3

Use the following formula to derive the net total expenditures per weighted pupil (NTEWP):

NTE / TWE-F = NTEWP

Y-1 ______/ ________ = ________
Y-2 ______/ ________ = ________
Y-3 ______/ ________ = ________
Y-4 ______/ ________ = ________
Y-5 ______/ ________ = ________

Step 4

Record these data on Worksheet #25.13.

WORKSHEET #25.7

Form #25 and #25.1: Calculations and Projections of Indicators - Detail and Summary

Directions for Calculating Indicator #7

Professional Staff Turnover Rate in Percent Per Year (PSTR) - Defined as number of professional staff separations for a given school year, divided by total professional staff budgeted for that year. Multiply the resulting quotient by 100.

Note:

1. Professional staff includes classroom teachers, instructional specialists, and administrators.
2. Hold the Current Year's Level constant through Y-5 unless a specific project has been designed to change the level. If a project has been established to change these levels the setting of the levels will be based on professional judgment concerning the degree of change.

Step 1

Record below the Current Year's percent of professional staff turnover rate (PSTR) from Worksheet #6.7:

PSTR__________

Step 2

List the PSTR for Y-1 through Y-5 below and record these figures on Worksheet #25.13.

Y-1__________
Y-2__________
Y-3__________
Y-4__________
Y-5__________

WORKSHEET #25.8

Form #25 and #25.1: Calculations and Projections of Indicators - Detail and Summary

Directions for Calculating Indicator #8

Percent of Professional Staff with Masters Degree or More (PPSMDM) - Defined as the number of professional staff at the beginning of a given school year with at least a masters degree, divided by total professional staff budgeted for that year. Multiply the resulting quotient by 100.

Note:

1. Professional staff includes classroom teachers, instructional specialists, and administrators.
2. Hold the Current Year's Level constant through Y-5 unless a project has been designed to change the level. The change in level because of a project is based on professional judgment.

Step 1

Record below the Current Year's percent of professional staff with masters degree or more (PPSMD) from Worksheet #6.8:

PPSMD__________

Step 2

List the PPSMD for Y-1 through Y-5 below and record these figures on Worksheet #25.13:

Y-1__________
Y-2__________
Y-3__________
Y-4__________
Y-5__________

WORKSHEET #25.9

Form #25 and #25.1: Calculations and Projections of Indicators - Detail and Summary

Directions for Calculating Indicator #9

Percent Graduating Class Attending Post High School Education (PGCAPHE) - Defined as the number of previous year's graduating class attending some form of post high school education full or part time divided by total number in the previous year's graduating class. Multiply the resulting quotient by 100.

Note:

1. This indicator includes all types of continuing education.
2. The Current Year's Level is held constant through Y-5 unless a specific project has been designed to change the level. The change in level because of a project is based on professional judgment.

Step 1

Record below the Current Year's percent of graduating class attending post high school education (PGCAPHE) from Worksheet #6.9:

PGCAPHE__________

Step 2

List the PGCAPHE for Y-1 through Y-5 below and record these figures on Worksheet #25.13:

Y-1__________
Y-2__________
Y-3__________
Y-4__________
Y-5__________

WORKSHEET #25.10

Form #25 and #25.1: Calculations and Projections of Indicators - Detail and Summary

Directions for Calculating Indicator #10

Drop-Out Percent for Grades 10-12 (DOP) - Defined as total number of pupils who would have been in 10, 11 and 12 grades during the current school year but are classified on your school records as "withdrew-drop-out" as of the beginning of the current school year, divided by the total enrollment in grades 10, 11 and 12 at the beginning of the current school year. Multiply the resulting quotient by 100.

Note:

1. Hold the Current Year's Level constant through Y-5 unless a specific project has been established to change the level. If a project has been established the setting of the levels will depend on professional judgment.

Step 1

Record below the Current Year's drop-out percent for grades 10-12 (DOP) from Worksheet #6.10:

DOP__________

Step 2

List the DOP for Y-1 through Y-5 below and record these figures on Worksheet #25.13:

Y-1__________
Y-2__________

Y-3__________
Y-4__________
Y-5__________

WORKSHEET #25.11

Form #25 and #25.1: Calculations and Projections of Indicators - Detail and Summary

Directions for Calculating Indicator #11

Language Achievement - Deviation from Grade Level (LADGL) - Defined as the mean score on the language portions of achievement tests administered to grades 3, 6, 9, and 12, or other grades close to these levels, converted to "months behind or ahead or grade level" for each grade, based on test norms for that grade.

Note:

1. Hold the Current Year's Level constant through Y-5 unless a project has been designed to change the level. The setting of the new levels will depend on professional judgment.

Step 1

Record below the Current Year's total months deviation (TMD) for language achievement from Worksheet #6.11:

TMD__________

Step 2

List the TMD for Y-1 through Y-5 below:

Y-1__________ Y-3__________
Y-2__________ Y-4__________
Y-5__________

Step 3

Record these data on Worksheet #25.13.

WORKSHEET #25.12

Form #25 and #25.1: Calculations and Projections of Indicators - Detail and Summary

Directions for Calculating Indicator #12

Mathematics Achievement - Deviation from Grade Level (MADGL) - Defined as the mean score on the mathematics portions of achievement tests administered to grades 3, 6, 9, and 12 or other grades close to these levels, converted to "months behind or ahead or grade level" for each grade, based on test norms for that grade.

Note:

1. Hold the Current Year's Level constant through Y-5 unless a project has been designed to change the level. The setting of the new levels will depend on professional judgment.

Step 1

Record below the Current Year's total months deviation (TMD) for mathematics achievement from Worksheet #6.11:

TMD__________

Step 2

List the TMD for Y-1 through Y-5 below:

Y-1__________ Y-3__________
Y-2__________ Y-4__________
Y-5__________

Step 3

Record these data on Worksheet #25.13.

WORKSHEET #25.13

Forms #25 and #25.1 - Calculations and Projections of Indicators

- Detail and Summary

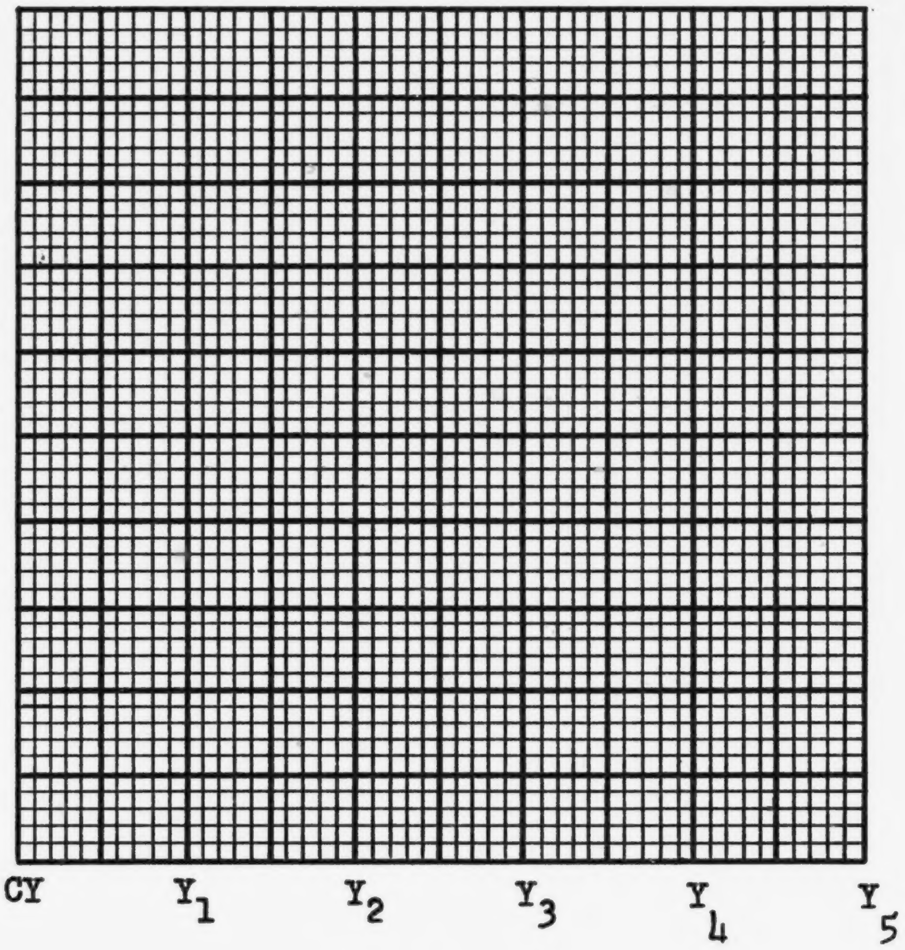
Indicator	Fiscal Year					
	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5

	FIVE - YEAR PLAN	CALCULATIONS AND PROJECTIONS OF INDICATORS - DETAIL	

Educational Unit:

Indicator #

Legend: CL
DL
EL



FIVE - YEAR PLAN	CALCULATIONS AND PROJECTIONS - SUMMARY
Educational Unit:	Legend: BC ABC FBC

Indicator	Scale	Fiscal Year					
		CY	Y_1	Y_2	Y_3	Y_4	Y_5

Form #25.1

Form #26: Manpower Requirements

1. Fill in the name of your school district.
2. Combine the data from Forms #21, #23, and #23.1 of the preferred Alternative Program and Project Set. If the set allows for reduction in the number of positions and personnel from the Final Base Case be certain this reduction has been taken into account. Adjust the turnover figures if the total number of positions in the various categories have increased or decreased.

FIVE-YEAR PLAN	MANPOWER REQUIREMENTS

Educational Unit:

Fiscal Year Position	Current Year	Y_1		Y_2		Y_3		Y_4		Y_5	
	Number Employed	NP	ST	NP	ST	NP	ST	NP	ST	NP	ST
Professional Admn.											
Superintendent											
Asst. Supt., Bus.											
Asst. Supt., Ed.											
H. S. Principal											
Jr. H. S. Prin.											
Elementary Prin.											
Directors											
Coordinators											
Asst. Prin.											
Other											
Professional Inst.											
Elementary											
Grades 1-3											
Grades 1-6											
Secondary											
Math											
Social Sciences											
Physical Sci.											
Lang. Arts											
Foreign Lang.											
Data Processing											
Other											
Inst. Specialists											
Art											
Music											
Reading											
Librarian											
Physical Ed.											
Guidance											
Nurses											
Psychologist											
Special Ed.											
Teachers Aid											
Other											
Collateral Services											
Clerical											
Operation											
Maintenance											
Bus Drivers											
Food Service											
Other											
Total to be Hired		+		+		+		+		+	
Total Staff Required											

Form #26

Form #27: Revenue Forecast

1. Fill in the name of your school district.
2. Record the revenue sources and the estimated amounts from the following forms for CY through Y-5: (a) Form #18 - confirmed revenue forecast for CY through Y-5; and (b) Form #19 - revenue alternatives and additional revenue realized through operations and capital improvement projects.

	FIVE-YEAR PLAN	REVENUE FORECAST

Educational Unit:

Fiscal Year / Revenue Source	Current Year	Y_1	Y_2	Y_3	Y_4	Y_5

Form #27

Report #3: Five Year Plan and Program

This is a comprehensive report to the board of school directors on the recommended Five-Year Plan. The report is submitted to the board for their consideration and approval. The report will contain the programs and projects of the Final Base Case and the preferred project alternatives. In addition it will form a guide to construction of the detailed budget for the coming fiscal year.

The format employed in this report is a matter of personal taste; however, effective communications with the board should be the primary consideration. It is necessary that the board fully understand the Five-Year Plan in terms of the resource allocation decisions and revenue estimates.

The first section of the report should deal with the factors contributing to change in the school district over the next five years. The problems related to these changes should also be discussed. The primary objectives and the "real-world" limiting conditions of the school district should be introduced at this point. A summary of the highlights of the Five Year Plan and how it is designed to fulfill the objectives should follow.

Indicator levels should be explained and illustrated. The Current, Desired and Expected Levels can be shown on a single graph for each indicator. The Current Levels provide a reference point for the board and staff; the Desired Levels, the aspirations of the board and staff; and the Expected Levels, the best educated judgment of obtainable reality by the board and staff.

Revenue recommendations should be reviewed and discussed in conjunction with the general discussion concerning the financial aspects of the Five Year Plan. A detailed revenue estimate will be included at the end of the report.

All the salient points of the Analysis and Summarization of the Final Base Case Report should be summarized and presented at this point. This summary should be followed by a summary report of the expenditures for all programs and projects over the next five-year period. This summary should be supported by a detailed estimate of expenditures by program and project over the same period. A detailed five-year estimate of revenues will conclude the report.

The following forms provide information for constructing the report and they can be displayed in the report:

1. Form # 2: New Enrollment Forecast
2. Form #21: Capital Improvement Project
3. Form #22: Capital Improvement Project(s) Summary
4. Form #23: Program - Detail
5. Form #23.1: Project - Detail
6. Form #24: Program and Project Summary
7. Form #24.1: Program Summary
8. Form #25: Calculations and Projections of Indicators - Detail
9. Form #25.1: Calculations and Projections of Indicators - Summary
10. Form #26: Manpower Requirements
11. Form #27: Revenue Forecast

APPENDIX A

PLANNING-PROGRAMMING-BUDGETING SYSTEM PROCEDURE PROGRAM AND PROJECT CLASSIFICATION

The Defense Department initially applied PPBS to major weapon systems programs. A weapon systems program is conceived of as a project with an initiation and a termination. It is a series of activities which add to an existing military establishment. In the terminology utilized in this document a weapon system program, no matter how large, is a "project". No doubt the Defense Department adopted the word "program", because their large efforts involved many activities which were already called "projects".

For reasons which are not clear the application of PPBS in the non-defense areas has used a slightly different definition of a program. A program here is an attempt to identify a series of continuing activities which form a part of the organization. Thus, at the beginning of every PPBS design, there is a major effort to identify an (usually hierarchial) organization of programs and subprograms which are treated as permanent. The program hierarchy is a way of breaking up the organization which is not necessarily coincident with the formal organization and which, presumably, ties activities to a specific objective. This definition of program as a portion of the continuing organizational activities probably evolves because public systems, unlike weapons systems, are continuing, politically entrenched organizations, presumably fulfilling a continuing need.

Parenthetically, the difficulties involved in trying to come up with a useful program hierarchy, one on which everyone can agree, and which has a one-to-one correspondence between programs and objectives, is so difficult that many PPBS installation projects bog down at this point.

Furthermore, assuming that programs are continuing contradicts one of the basic purposes of PPBS, namely to facilitate the exploration of new activities (and of reducing old) to better attain objectives. There may be an improvement in thinking of incremental changes to objective-oriented programs rather than to organizational departments. But this is certainly a minor change compared to the capability of considering completely new combinations of activities.

What is needed is a method of handling PPBS program definition which will have the following characteristics:

1. It will recognize the fact that there are continuing activities in public systems. The programs will continue after PPBS is adopted, at least for a while. Furthermore these activities form a basis for most peoples' conceptualization of the system. It is, therefore, necessary to summarize the activities of the organization in terms of these categories.

2. The system must permit new activities to be added. The new projects may cut across the existing activities and should be kept separate from existing programs. This is necessary to facilitate control of the new activity, either because funding sources for the activity are separate, or because the activity contributes to objectives in a different way from the continuing programs.

In order to develop a system which will meet these criteria it is necessary to define two kinds of activity, each associated with one of the above characteristics; programs are associated with continuing activities, projects with establishment of new activities. The distinction between programs and projects is critical to an understanding of the PPB procedure:

Program - a program is a collection of continuing activities, (1) which are sufficiently routine and accepted to be carried on unless there is a specific decision by the board or superintendent to discontinue them, (2) which some specific segment of the present school organization has responsibility for undertaking, (3) which have a specific relationship to more than one objective, and (4) which for this reason are divisible into subprograms.

Project - a project is related to new activities (1) which are non-routine, less familiar, and not continuing, (2) which have a specific beginning and closing date, (3) which are outside the formal organizational structure, (4) which generally relate to a single explicit objective, (5) which normally relate to change and innovation, (6) for which performance involves high risk to the organization, and (7) which are not normally divisible into sub-projects.

PPBS may be based on programs, on projects or on a combination of both.

Program Approach

There are seven major approaches to the classification of an organization's activities, each of which yields a different classification structure. These are:

1. Purpose - A purpose classification emphasizes primary, secondary, and tertiary objectives proceeding from the most general or primary objective to the most specific or tertiary objectives which must be accomplished within "real-world" constraints.

2. Process - The sequence of components which must be completed to achieve a single result may also be the basis of classification.

3. Resource - The accounting classification by which individual objects of expenditure are aggregated into general classes of resource allocation is a classification system common in school districts and other governmental organizations.

4. Organization - The authority pattern in organization is a frequent approach to classification which in effect shows the organizational units to which responsibility for accomplishment of various activities is assigned.

5. Location - The geographic locations at which different activities of the organization are conducted may also be the basis of the classification approach.

6. Clients - In service agencies, the different types of clients served may be reflected in the classification. For instance, the requirements of certain school children for special education or vocational-technical education.

7. Functions - Similar types of activities, such as maintenance services or clerical services may be grouped together in a classification.

While each of these approaches to classification provides a somewhat different perspective, they are all directly involved in planning the work of an organization. Thus, to achieve a particular purpose may require one or several different processes; a particular process may require the utilization of a variety of resources; the utilization of a particular resource may involve several organizational units; the fulfillment of an organization responsibility may require action at several different locations; service to a client may involve a variety of functions, and; carrying out a function may help to achieve several different purposes. Actually, each of these seven different approaches are necessary to fully define each action carried out within an organization. As a practical matter however, the permutations of these seven factors in an actual organization yields such a large classification matrix as to be useless in practice. For instance, a typical middle sized school district which applied each of the classification approaches in the detail commonly used in education could derive a classification structure with more than ten million individual classes. In addition, since each one of these classification approaches is ordinarily in a constant state of change it would be necessary to make major revisions every year. Consequently, it is essential to greatly simplify the program classification while at the same time relating the program classification to each of the seven different classification approaches.

Guidelines for Program Classification

A number of general guidelines have been used in designing a simplified program classification for use by local shcool districts and intermediate units. These guidelines are as follows:

1. The program classification must be useful to the policy and executive personnel in the school district in multi-year planning.
2. The program classification must be adaptable to both small and large school districts and to intermediate units or counties.
3. The program classification must be within the capability of school districts to meet the data requirements necessary for determining or estimating costs of programs.
4. The program classification must allow for easy translation into the accounting and budgeting classifications required by the Pennsylvania Department of Public Instruction.

The Manual of Accounting and Related Financial Procedures for Pennsylvania School Systems published by the Department of Public Instruction (DPI) is followed by the majority of local districts in their budgetary and expenditure accounting. This manual defines the official accounting classification. See Appendix B for the detailed accounts. In design of the program classification special attention was given to make it as easy as possible to convert from the program classification.

Program Classification

The program classification shown below has four major areas: Coordinative Program Area, Instructional Program Area, Health Program Area, and Business Program Area. Within these four program areas are included twenty-three different programs. A number of illustrated subprograms are shown. This classification is based on functions, and, within functions, on client grouping.

It is anticipated that some of the subprograms shown will not be utilized by intermediate units and school districts. It is also anticipated that intermediate units and school districts will add many subprograms, such as, elementary mathematics, elementary language arts, secondary general science, etc.

The relationship of the proposed program classification to the DPI accounting classification can be illustrated by reference to the Facilities Program. Our Subprogram Operation and Maintenance of Plant is the same as the 0600 Operation and Maintenance of Plant function in the Pennsylvania Department of Public Instruction classification.

1. Coordinative Programs Area
    a. Policy and Executive Program
    b. Comprehensive Planning Program
        (1) Long Range Development Planning Subprogram
        (2) Planning-Programming-Budgeting Subprogram
    c. Information and Liaison Program
    d. Community Services Program
    e. Coordinative Support Services Program
        (1) Program Development and Evaluation Subprogram
        (2) Professional Education Subprogram
        (3) Secretarial and Clerical Service Subprograms
2. Instructional Programs Areas
    a. Early Childhood Instruction Program
    b. Elementary Instruction Program
    c. Secondary Instruction Program
    d. Vocational-Technical Instruction Program
    e. Special Instruction Program
    f. Continuing Instruction Program

g. Instructional Support Services Program
    (1) Instructional Media Subprogram
    (2) Pupil Assessment-Guidance Subprogram
    (3) Attendance Services Subprogram
    (4) Program Development and Evaluation Subprogram
    (5) Professional Education Subprogram
    (6) Secretarial and Clerical Services Subprogram

3. Health Program Area
    a. Nursing Program
    b. Medical Program
    c. Dental Program
    d. Psychological Program
    e. Health Support Services Program
        (1) Program Development and Evaluation Subprogram
        (2) Professional Education Subprogram
        (3) Secretarial and Clerical Services Subprogram

4. Business Program Area
    a. General Services Program
        (1) Finance Subprogram
        (2) Personnel Subprogram
        (3) Purchasing Subprogram
        (4) Communications Subprogram
        (5) Data Processing Subprogram
    b. Pupil Transportation Program
    c. Food Services Program
    d. Facilities Program

    - (1) Operation and Maintenance of Plant Subprogram
    - (2) Capital Improvement Subprogram
    - (3) Debt Service Subprogram
- e. Fixed Charges Program
- f. Business Support Services Program
    - (1) Program Development and Evaluation Subprogram
    - (2) Professional Education Subprogram
    - (3) Secretarial and Clerical Services Program

In the program-oriented approach one does not talk about the changes in the programs in terms of specific added or subtracted activities, since such changes are projects. In the program-oriented approach the level of activity should be determined by planning ratios. For example, if we are dealing with a program of elementary education, we talk about regular teachers per student, or expenditure for books and materials per student. A program change would then consist of the changing of these ratios. An example of a program change is to reduce the student-teacher ratio in elementary education from thirty to twenty-five. The educational consequences of this change would be explored by computing the staff requirements, costs and the changes in objectives and indicators.

At the highest level of management, and before specific project ideas have been developed, this sort of program planning might be most appropriate. One system has actually been developed for state level planning of educational activities using exactly this approach. The decision-makers can set desired levels for ratios applicable to each program and can assign priorities indicating which of these desired levels they would most like to attain. The program then allocates available resources so as to improve the ratios toward the desired level, giving emphasis to those which have been given highest priority.

The main deficiency of this approach is that it does not permit the decision-maker to manipulate specific activities or collections of activities. After deciding to increase the manpower in elementary education, say, the very next question is what will this manpower do? This immediately leads to the question of projects.

Project Approach

The organization resulting from a project-oriented approach may appear similar to that of the program-oriented approach, though a project approach will normally involve a larger number of smaller scale group of activities. Further, projects are considered individually. For example, a remedial reading program might well contribute to elementary education, but in the pure-project method the concept of elementary education as a totality is not involved. The organization is conceived of as a series of activities such as first grade reading, first to sixth grade remedial reading, physical training, and so on.

In planning, projects are added and subtracted. The goal is to find that collection of new and modified projects which contribute most to the total objective of the educational unit at the least cost. Project development and modification both involve estimates of cost (additional manpower, fixed equipment, and supplies) and estimates of the extent to which objectives of the educational unit will be better achieved. Of these estimates, the anticipated improvement in meeting objectives is the more subjective and may require a broader range of professional judgments.

The disadvantage of this approach is that it is hard to get an overall view of how the organization will operate. Any real organization might, under this method, consist of hundreds of projects. It is hard to see how they relate, what kind of interactions there might be, and it is hard to present the results of planning to the decision makers and to the community, who do not have the time to study each project in detail.

A Mixed Approach

In order to obtain the advantages of both the program and project-orientation, the EPPBS System described in this document utilizes a mixed approach. This approach recognizes that there are continuing programs, that they will continue for some time into the future, and that most people view the organization in terms of these continuing programs. On the other hand, it recognizes that there is a desire to keep many activities separate, for organizational or financial reasons, and that it is more desirable to facilitate the addition of activities as separate entities. For this reason, all new activities are automatically designated as projects. It is essential to maintain close administrative review of changes resulting from new activities; by defining these changes as projects such review is made possible.

The expenditures summary for such an approach would include both programs and projects. However, the program activities would be forecasted solely on the basis of ratios and the project activities on the basis of specific project design. Planning would then consist of finding that combination of ratio changes and new projects which provide the greatest feasible increase in performance.

In order to provide decision-makers and community with a format familiar to them, provision has been made for allocating each project cost back into the program costs. Therefore, two kinds of reports are envisioned: (1) a program and project report which shows each basic program (minus all project activity) separately plus each individual project separately; and (2) an integrated program report which shows effects of adding the project effort into each program.

In this integrated report each program encompasses all of the activities which normally relate to it, including project activities. In order to produce this integrated program report some information is necessary which is not required in either the pure program or the pure project effort. The projects must be described so that it is clear how each project can be reallocated to programs. For example, in a school district, a remedial reading project would be stated so that some of its costs (some salaries, etc.) would be identified as part of the elementary education program and other costs as part of the, say, instructional support program. This provides the basis for the integrated program report. It also means that if a given project were to be designated by the superintendent as part of the continuing programs, it would be clear how to allocate the project's activities.

It is true that programs are forecast on the basis of ratios and projects on the basis of a specific design. However, since integrating projects into programs occurs at the end of the planning process, after forecasts have been made and planning decisions taken, there is no problem in summarizing the project costs into the program costs. In each instance you are primarily concerned with dollar costs. Thus to facilitate the production of program reports, a matrix, or "crosswalk" needs to be prepared. This matrix shows how to allocate each of the project costs to the program costs.

APPENDIX B

GENERAL FUND

CHART OF STANDARD EXPENDITURE ACCOUNTS
(Revised 10/31/68)

0100 ADMINISTRATION

0111 Salaries, Board Officials
0112 Salaries, Educational Administration
0113 Salaries, Business Administration
0114 Salaries, Legal Services
0115 Salaries, Tax Collection

0121 Materials and Supplies, Administration
0124 Materials and Supplies, Legal Services
0125 Materials and Supplies, Tax Collection

0131 Expenses, Administration
0134 Expenses, Legal Services
0135 Expenses, Tax Collection

0151 Contracted Auditing Services
0154 Contracted Legal Services
0155 Contracted Tax Collection Services
0159 Other Contracted Services for Administration

0200 INSTRUCTION

0211 Salaries, Principals
0212 Salaries, Supervisors or Coordinators
0213 Salaries, Teachers
0214 Salaries, Librarians
0216 Salaries, Other Instructional Staff
0218 Salaries, Instructional Assistants
0219 Salaries, Secretarial, Clerical, Other Personnel

0221 Textbooks
0222 Teaching Supplies
0223 Library Books and Supplies
0224 Audiovisual Materials
0229 Other Materials and Supplies for Instruction

0231 Expenses, In-Service Training
0239 Expenses, Other, for Instruction

0250 Contracted Services for Instruction

0300 PUPIL PERSONNEL SERVICES

0311 Salaries, Directors, Coordinators, Supervisors
0312 Salaries, Attendance Personnel
0313 Salaries, Guidance and Psychological Personnel
0319 Salaries, Clerical and Other Classified Personnel

0320 Materials and Supplies, Pupil Personnel Services

0330 Expenses, Pupil Personnel Services

0350 Contracted Services, Pupil Personnel Services

0400 HEALTH SERVICES

0411 Salaries, Directors, Coordinators, Supervisors
0412 Salaries, Physicians and Psychiatrists
0413 Salaries, Nurses
0414 Salaries, Dentists and Hygienists
0415 Salaries, Other Professional Health Personnel
0416 Salaries, Non-Public School Health
0418 Salaries, Clerical, Non-Professional Dental Services
0419 Salaries, Clerical, Non-Professional Medical & Other

0421 Materials and Supplies, Dental
0422 Materials and Supplies, Medical & Others

0431 Expenses, Dental
0432 Expenses, Medical and Other
0433 Expenses, Non-Public School Health

0445 Equipment (Replacement) for Health Services

0451 Contracted Dental Services
0452 Contracted Medical & Other Services
0453 Contracted Services, Non-Public School Health

0500 PUPIL TRANSPORTATION SERVICES

0511 Salaries, Supervisors
0512 Salaries, Drivers
0513 Salaries, Mechanics, Other Garage Employees
0519 Salaries, Clerical and Other Employees

0521 Transportation Vehicles, Gasoline and Oil
0523 Transportation Vehicles, Repair Parts, Materials and Supplies
0529 Other Materials and Supplies

0531 Automotive Liability Insurance
0532 Other Pupil Transportation Insurance
0533 Transportation Rental
0539 Other Transportation Expenses

0546 Transportation, Replacement of Vehicles & Equipment

0551 Contracted Maintenance, Transportation Vehicles & Equipment
0553 Contracted Maintenance, Office, Garage, Grounds
0555 Board and Lodging in Lieu of Transportation
0556 Contracted Carriers
0557 Public Carriers Fares

0600 OPERATION AND MAINTENANCE OF PLANT

0611 Salaries, Supervisors
0612 Salaries, Operation and Maintenance
0619 Salaries, Clerical and Others for Operation and Maintenance

0621 Operation and Maintenance Supplies
0622 Fuel for Buildings

0631 Utilities
0639 Other Expenses for Operation and Maintenance of Plant

0641 Equipment Built Into Sites
0642 Equipment Built Into Buildings
0643 Equipment, Instructional
0644 Equipment, Non-Instructional

0650 Contracted Services for Operation and Maintenance

0800 FIXED CHARGES

0831 School System Contributions to Employee Retirement
0832 School System Share of Social Security Taxes
0833 Workmen's Compensation Insurance
0834 Employee Insurance
0835 Fire Insurance
0836 Other Insurance
0837 Judgments Against the School System
0838 Rent of Capital Facilities and Equipment
0839 Other Fixed Charges

0900 FOOD SERVICES

0961 Contribution to the Cafeteria Fund
0962 Contribution to the Cafeteria Fund for Undernourished Children

1000 STUDENT ACTIVITIES

1010 Salaries, Student Activities

1020 Materials and Supplies, Student Activities

1030 Expenses for Student Activities

1048 Equipment (Replacement), Student Activities

1050 Contracted Services for Student Activities

1063 Contributions to Student Activities Fund(s)

1100 COMMUNITY SERVICES

1110 Salaries, Community Services

1120 Materials and Supplies, Community Services

1130 Expenses, Community Services

1149 Equipment (Replacement) for Community Services

1150 Contracted Community Services

1200 CAPITAL OUTLAY

1210 Salaries, Capital Outlay Projects

1241 Land
1242 Buildings
1243 Equipment, Instructional
1244 Equipment, Non-Instructional
1245 Equipment, Health Services
1246 Equipment, Pupil Transportation
1247 Equipment, Food Services
1248 Equipment, Student Activities
1249 Equipment, Community Services

1265 Capital Reserve Fund Transfers Under Section 690 of the School Code
1266 Capital Reserve Transfers Under Section 2932 of the School Code

1300 DEBT SERVICE

1371 Authority Rentals
1372 Interest, Revenue Anticipation Loans
1373 Interest, Improvement and Equipment Loans
1374 Sinking Fund Principal Payments

1375 Sinking Fund Interest Payments
1379 Refunds of Prior Years' Receipts

1400 INTERSYSTEM PAYMENTS

1481 Payments to Area Technical Schools and Special Program Jointures
1482 Payments to Pennsylvania School Systems
1483 Payments to Out-Of-State School Systems
1484 Payments to Special Schools
1485 Payments for County Operated Classes for Exceptional Children
1486 Payments to State College Laboratory Schools
1487 Payments to Community Colleges
1488 Payments to Community Colleges for Area Vocational-Technical School Pupils

APPENDIX C

SCHOOL DISTRICT DATA AND INFORMATION FILE REQUIREMENTS

Listed below are the major data files and their contents which are essential to an expeditious cycling of the PPB Procedure. Insofar as it is possible, these information and data items should be collected prior to beginning the actual implementation and placed in a file folder. A folder should be set up for each file listed in this appendix. One or more letters precedes each data or information item, viz: C (current), E (expected), and P (projected). The letter C designates the most current items. The letter E designates items that were used last school year when preparing the current year's budget; if you can't locate these items then leave it blank. The letter P designates items that should be available for the current year and each of the succeeding five years.

1. Operations Data File - Provides a storage location for data relating to indicators and contains the following data:

   (C,E) a. Number of standard classrooms,

   (C,E) b. Total number of classroom teachers (equivalent),

   (C,E) c. Total number of courses (equivalent of 200 minutes/week) grades 7-12,

   (C,E) d. Total number of professional instructional specialists,

   (C,E) e. Total dollar expenditure for curriculum materials, supplies, and library books,

   (C,E) f. Net total expenditures,

   (C,E) g. Total number of professional staff separations,

   (C,E) h. Total number of professional staff,

   (C,E) i. Total number of professional staff with MA degree or more, (C,E) j. Number of students in previous year's graduating class attending post high school education,

(C,E) k. Number of students in previous year's graduating class,

(C,E) l. Number of dropouts in grades 10-12,

(C,E) m. Number of pupils in grades 10-12,

(C,E) n. Mean score on language achievement test for grades 3, 6, 9, and 12 - adjusted for date of examination, and

(C,E) o. Mean score on mathematics achievement test for grades 3, 6, 9, and 12 - adjusted for date of examination.

2. Planning File - Provides the PPBS Procedure with a current record of the school district's long range commitments and expectations. The file contains the most current Five-Year Plan and Programs and Ten Year Comprehensive Long Range Plan as well as the following information:

(C) a. Current annual detailed budget - the budget should have enough detail to allow it to be broken down by program,

(C) b. Goals which were used in the development of the current budget,

(C) c. Objectives which were used in the development of the current budget,

(C) d. Program objectives which were used in the development of the current budget,

(C) e. Sufficient information to assign non-salary expenses by Instructional Program, viz: Early Childhood, Elementary, Secondary, Vocational-Technical, and Special, and

(C) f. Sufficient detail on capital outlay to assign to program.

3. Organizational Policy File - Contains all relevant policies that will influence th development of the Final Base Case and the development of the Fiv-Year Plan and Programs. The file should contain at least the following policies:

(C) a. Student/teacher ratio policy,

(C) b. Staff qualifications policy,

(C) c. School grade organization policy, and

(C) d. Space utilization policy.

4. Problem Identification File - Provides a storage location for problems that have been identified within the school district. The file should contain brief written statements identifying the nature of educational management, and/or capital program problems which the school district is now facing. A problem is defined as an undesired situation.

5. Program Idea File - Contains a list of suggested program changes and innovations, normally drawing on the ten year long range development plan.

6. Community Characteristics File - Provides specific information for describing and assessing changes in the community and may contain the following information:

(C,P) a. Community attitudes regarding specific programs,

(C,P) b. Community attitudes regarding the educational effort of the school district,

(C,P) c. Information on employment outlook nationally, regionally, and locally, and

(C,P) d. Census data - socio-economic.

7. Demographic File - Contains information on the computing of enrollment forecasts as well as subsidiary information about the student population and community characteristics which may be useful in establishing the operating requirements of the school district. The file should contain enrollment data for:

(C,E,P) a. Early Childhood Instruction (Pre K and K),

(C,E,P) b. Elementary Instruction (Grades 1-6),

(C,E,P) c. Secondary Instruction (Grades 7-12),

(C,E,P) d. Vocational-Technical Instruction (Grades 10-12), and

(C,E,P) e. Special Instruction (Elementary and Secondary).

8. Revenue Data File - Contains specific values used in the computation of revenue forecasts, such as the following:

   (C,E) a. Market value of real property in district,

   (C,E) b. Ratio of taxable assessed value to market value of real property,

   (C,E) c. Taxable assessed value of real property in district,

   (C,E) d. Population 21 and over,

   (C,E) e. Working population within the district,

   (C,E) f. Growth in employable population,

   (C,E) g. Weighted average daily membership,

   (C,E) h. Statewide market value per pupil, and

   (C,E) i. Rental and Sinking Fund Payments.

For additional discussion, see Appendix F.

9. Cost Factors File - Provides a listing of variables which account for the expenditures of the school district over agiven period of time. Some of these variables are:

   (C) a. Average classroom teachers salary for Early Childhood Instruction, Elementary Instruction, Secondary Instruction, Vocational-Technical Instruction, and Special Instruction Programs,

   (C) b. Average salary for new entrants into all other categories of positions,

   (C) c. Compounded inflation rates you may wish to use, and

   (C) d. An itemized listing of any specific cost factors which you may want to apply in your school district other than the average cost which would be calculated from your current annual budget, i.e., $20 per new pupil at the secondary level for library books.

10. Personnel Factors File - Contains all relevant data pertaining to personnel that will assist you in developing the Analysis and Summarization of the Final Base Case and the development of the Five-Year Plan and Programs. The file should contain at least the following data:

(C) a. Number of personnel in each category of position,

(C) b. Number of unfilled positions,

(C) c. Number of personnel who retired at end of the previous school year,

(C) d. Expected percentage retiring, i.e., what percentage will retire in a "typical" school year,

(C) e. Number of personnel who resigned at end of previous school year,

(E) f. Expected percentage resigning, i.e., what percentage of all personnel will resign in a "typical" school year, and

(E) g. Estimate of the number of classroom teachers which you feel is a maximum you could hire in any one year.

11. Capital Improvement File - Contains data relevant to capital improvements undertaken by the school district but not yet occupied. The following data should be incorporated in the file:

(E) a. Number of facilities and type (elementary and secondary),

(E) b. Number of classrooms in each facility,

(E) c. Number of students facility will accommodate,

(E) d. Debt service costs,

(E) e. Number of administrative personnel added,

(E) f. Number of support personnel added,

(E) g. Number of instructional specialists added, and

(E) h. Year in which the facility is to be opened.

APPENDIX D

A GENERAL METHOD OF ESTIMATING FUTURE SCHOOL ENROLLMENTS AS A FUNCTION OF COMMUNITY GROWTH

Introduction

Since school enrollment is required by law and education is publicly in high esteem, it is appropriate to view school enrollment trends in the aggregate, both public and private, as a reflection of community development. On a year to year basis, it is reasonable to anticipate next year's enrollments by comparison with this year's enrollments, as is commonly done. For longer range estimates, community characteristics have also to be considered. In the middle time range of, say, five years (to which this effort is addressed), changes in community housing supply have to be considered along with probable changes in the percentage of pupils attending public school. In the long run, changes in the characteristics of population behavior, such as birth rates, have also to be considered in concert with the changing housing supply.

In developing a method of estimate that is appropriate for all the school districts of the Commonwealth of Pennsylvania, it is necessary to work with data that is available in all districts. Housing data is generally not available in rural areas and is of uneven quality where it is available. It would be useful to have good information by small area for housing data. Birth statistics are deceptive or questionable where boundaries of post office districts, municipalities, and school districts do not coincide.

The reliable data that can be made avaliable include census information on population age distribution and recent school enrollment counts, although the latter may need adjustment to reflect changes in school district boundaries and to accomplish a proper assignment of private school pupils by grade to public school district of residence.

In order to proceed on this data base, it needs to be shown that population growth is highly conditioned by changes in number of households so that comparison of actual and expected enrollment trends may be interpreted to indicate changes in number of households. Granted this, it may then be assumed that prospective changes in household growth are related to recent changes so that future enrollment trends can be calculated to be consistent with expected household development.

Some observations on these matters are presented later. Before burdening the reader with this detail, however, a variety of limitations and cautions should be brought to his attention.

1. Adequate effort must be devoted to developing the basic information on current and recent enrollment of district residents.

2. Enrollments, if any, from institutions should be considered separately and held constant or altered in line with institutional plans. The main analysis should be based on changes in enrollments from the district's households.

3. In college towns, boarding students are counted as town residents; and this analysis will tend to understate population growth in these towns and other areas where institutions, such as prisons and hospitals, have sizeable numbers of inmates not of school age.

4. While the averages employed in this method of calculation are statistically well defined, they are only averages; and district deviations are to be expected. The estimates derived are statements of feasible growth; but the limits of what is feasible are not defined. Anything from a building boom to total desolation is possible.

5. What is termed household change in this report is actually only an index of household change. Housing statistics, which usually deal with the number of dwellings authorized to be built, may or may not correspond well with the index of household change. There may be important questions about demolitions, vacancy rates, incomplete reporting, changes in builder's plans, time lags, and household sizes. The index of household change is calculated as a function of migratory population 5-19 years old, i.e., about 1.65 such persons are estimated per net additional household. Since change in number of households is estimated from the development of enrollment trends and distributions, the index relates most specifically to changes in households served by the school systems, though this relationship is fogged by undefined historical factors implying some further realtionship between school households and other households in the community.

Since concern is with district students, enrolled in district public schools, and resident in households, there are actually many accounting categories, of which eight are of major concern.

1. District students
    a. Household residents
        (1) In own public schools
        (2) In other public schools
        (3) In private schools
    b. Institutional residents
        (4) In own public schools
        (5) In other public schools
        (6) In private schools
2. Other district students
        (7) In own public schools
        (8) In other schools

In multi-district accounting, all these categories would be of significance. However, from the point of view of one district, considerable simplification can be introduced. Institutional and other district students in own schools (categories 4 and 7) may be lumped under the heading of tuition students and categories 5, 6, and 8 can probably be ignored in most cases. Four categories remain to be accumulated at the district level - 1, 2, 3, and 4 plus 7. These can be pictured as shown in Figure I.

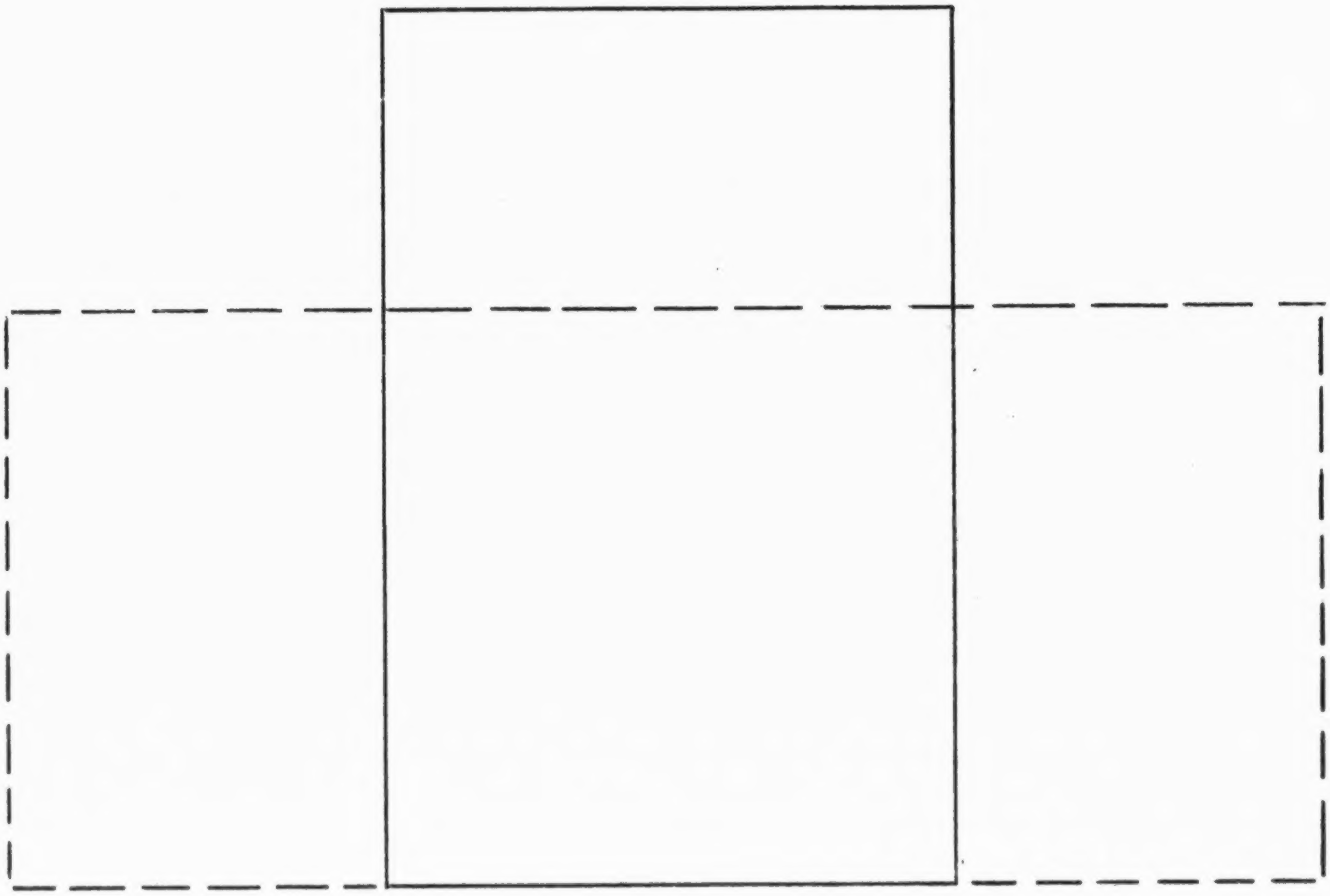


FIGURE 1. Our District Enrollment

Data should be conveniently available for categories 1, 3, 4, and 7. The assignment of private school students by public school district of residence will require the cooperation of private school administrators and may represent a considerable task. This task was undertaken in 1967-68 by private schools in and near Bucks County with the result that about 1,000 additional Bucks County residents were enumerated beyond what had been known before. The work resulted in significant changes in estimates of percentage of pupils attending public school in many districts. At the present time, public school enrollments are responding to rapidly changing percentages of total enrollment. Many districts are growing at rates unsustainably high in the long run, rates which are incorporated in any empirically dervied set of public school retention ratios. Work with data on hand for some districts, which happen to claim no private school enrollment, indicates a possible need for better assignment of private school students by public school district of residence.

Errors in assignment of private school students, as a practical matter, may lead to crisis situations in the utilization of school plant. To be specific, some elementary children in a district may attend a private school located in another district but subsequently turn up in their own district's high school. Unless they are correctly accounted for to begin with, their appearance on the roll in high school may be something like a "bolt out of the blue" since their arrival will not have been heralded by any quickening of community development.

As far as this method of analysis is concerned, errors in this assignment of private school students will lead directly to false indications regarding trends in migratory growth and household development, trends which can occur without much alteration of the physical landscape where families are doubling up or taking advantage of slack in the housing supply. The effect of such an error in the analytical scheme has delayed impact since allowance for future household development is made in proportion to what appears to have taken palce in the recent past.

Members of the post war baby boom are now maturing into housing market as they generate additional child-bearing households. It has been assumed that (1) where household declines are indicated in the present period (1965-70), 80 percent of the reduction will be recovered between 1970 and 1975; and (2) where household increases are established for the present period, greater increases (20 percent) are to be accommodated in the near future. If indications of household change relate to vagueness in pupil accounting, accuracy of estimate is problematical. The importance of a proper accounting, to begin with, is clearly evident. Since schools represent a major public investment at the local level, it would be reasonable to require periodic reports on the residence of private school pupils by public school district. For this estimating procedure data should be secured for the current year and for 1965.

Ideally, enrollment figures should reflect youngsters actually in school as of April 1, which is the target date of the U. S. Census count of population. Such data are not readily available, historically and for all school districts. Since the focus in the present effort is on the development of estimates over the next five years, it is reasonable to take an average of fall enrollments to approximate the situation in April. It may be noted parenthetically that fall enrollments, say those of October 1, closely approximate active roll figures.

Since it is required that a routine method be developed which is generally applicable, it follows that the analysis must depend on recently established behavioral averages. These averages are certainly not constants descriptive of physical time and space. At a given time the behavior of populations in different districts will not be uniform; and within a given district, one year will not be a carbon copy of the previous one. Differences in racial composition and housing expense, for instance, not to mention variations in housing development as regards apartments and single family dwellings, are likely to be associated with differences in family composition and household stability. The averages employed, however, are either quite stable as between 1950 and 1960 or, if derived by multiple linear regressions, they are of very high statistical significance. While correlation indices higher than 99 percent characterize all relations, the variables are intercorrelated (80 percent or higher) and interpolation of correlation coefficient is therefore questionable. However, the estimating constants have reasonable signs and values. The errors of estimation are relatively small and approximate a normal distribution, that is, there are many small errors and a few large errors with some of the larger errors compensating other larger errors and some of the smaller errors compensating other smaller errors.

Outline and Justification of Estimating Procedure

To begin with, the data on hand included 1960 population by five year age group, as reported by the U. S. Census, and estimates of April 1 active roll, public and private, by grade for the years 1965 and 1968.

The first set of calculations yields an estimate of school enrollments to be expected in 1965 from the 1960 population as if it were constrained to the same number of households as reported in 1960. The estimated and actual enrollment distributions are then compared to yield an index of household change.

The next set of calculations carries the analysis in similar fashion to 1970 with regard to enrollments to be expected from a constant household supply. An estimate of 1968 enrollments is then derived by interpolation between the actual 1965 enrollments and the estimates for 1970. The comparison of estimated and actual enrollments for 1968 again provides an index of household change, which is extrapolated to indicate allowance for household change for the whole period, 1965-70.

Expected household gain for 1970-75 is defined in terms of growth allowed for 1965-70, as previously described. Population and enrollment figures are then defined for 1975 to be consistent with the anticipated trend in households. The program allows for arbitrary definition of the number of households to be expected in 1970-75.

School age population and enrollments for the intervening years are derived by interpolation of the population figures and printed out for each year and for grades 1-12; and the public share is assumed constant between 1968 and 1973.

It is recommended that kindergarten enrollments be estimated in relation to total first grade enrollments with allowance being made for percent in public school and anticipated program changes. Since the law does not require attendance at kindergarten, statistical relations are lacking for estimating prospective growth of kindergarten enrollments. It would seem reasonable for the short run of, say, a year or two, to develop estimates by interviewing the student body as to the number of younger children apt to enter school, adjusting the findings to allow for younger children in families whose youngsters are attending non-public school and to guard against duplicate reporting by students who are members of the same family. A well designed sample would probably save some effort in this regard. In those districts which are also geographically well defined by municipal and post office district boundaries, reference to birth statistics may also be appropriate.

The estimating procedure requires that the joint distribution of school age population by grade be known and reasonably stable. The legal requirement of school enrollment and the social desire for education combine to make one expect a basically stable distribution. The actual distribution for 1960 is shown in Table I and has been incorporated into the estimating procedure. The reported distribution enables one to estimate school enrollment if age distribution is known or to estimate age distribution if school enrollments are known.

TABLE I

JOINT DISTRIBUTION OF POPULATION BY AGE GROUP AND SCHOOL LEVEL, PENNSYLVANIA, 1960
TOTAL POPULATION - ALL SCHOOLS

	Grade groups				
Age groups	1-3	4-6	7-9	10-12	1-12
5-9	.6055	.1368	-	-	.7423
10-14	.0139	.4747	.4759	.0128	.9773
15-19	.0062	.0062	.1120	.5615	.6859
20-24	.0003	.0013	.0039	.0213	.0268

Source: Detailed Characteristics, Pennsylvania, Vol. PC(1)-40D, U. S. Census of Population, 1960, Table 101, p. 562.

These frequencies do not add up to 1.000 for each age group since some youngsters are either not in school or are enrolled in grades outside the range considered. Some 5-9 year olds are enrolled in kindergarten; and some 15-19 year olds are enrolled in college.

This estimating procedure also requires that population age distribution and school enrollment be highly conditioned by changes in number of households. Based on a random sample of 20 counties, it would appear that this condition was met between 1950 and 1960 in Pennsylvania. The question may be put as follows: given the populations 0-4 years of age in 1950 in 20 counties and also the changes in the number of households in these counties, what is the best weighting of these factors to yield an estimate of any county's 1960 10-14 year olds, how good is this estimate, and could it reasonably be taken as merely a chance relationship?

The method of analysis is multiple linear regression and it is designed to yield errors such that the sum of their squares is a minimum as compared by any other set of errors resulting from a different weighting of the factors. Sixteen relations have been defined, and the weightings of the factors are all of very high statistical significance being at least three times greater than their standard errors. Statistical significance indicates the likelihood of selecting a random sample from a population not characterized by the derived relationships which sample would, none the less, tend to establish the observed relationships equally as well or better. The finding is that less than three out of a thousand randomly drawn samples from such a population would yield results favorably comparable to what has actually turned up. Thus we can be reasonably sure that the observed relations don't depend on the selection of the sample.

The sample of 20 counties was selected from an alphabetical listing of Pennsylvania counties by means of a table of random numbers. It includes the following counties: Adams, Armstrong, Beaver, Bedford, Bradford, Chester, Clarion, Clearfield, Crawford, Dauphin, Forest, Indiana, Lawrence, Mifflin, Monroe, Northampton, Northumberland, Synder, Venango, and Warren.

The findings of this research are listed in Table II, which includes, besides the weightings of the factors, an arbitrary constant and the standard error of the estimate expressed both as a number of people and as a percentage of the mean of the values being estimated. A standard error indicates the maximum error for two-thirds of the observations under ideal conditions.

The arbitrary constant represents something unexplained by the factors considered. A doctrinaire interpretation would claim, in most cases, that a community with no population to begin with would accumulate some people even though no households were added in the process. While this analysis was done in terms of total population, rather than just household population, there is more to the constant than that. The average size of a county is pertinent in this regard and reference can be made to a similar analysis done for all the census tracts in suburban Philadelphia (Pennsylvania and New Jersey). While the counties in the sample averaged 86,736 in 1960 population, the census tracts averaged about 6,500 persons. The arbitrary constants are, respectively 2,064 and -15. The weightings of the factors in both cases is almost the same, considering the differences in number of cases observed, 20 counties as opposed to 427 census tracts. In both cases, the constants are small in proportion to the means of the values being estimated. For the Philadelphia area census tracts, the best estimate of 1960 population would be derived by adding to 88 percent of the 1950 population, 4.1 persons per additional households. As shown in the top line of Table II, the weights for the counties are 89.8 percent and 3.95 persons per added household.

TABLE II

SUMMARY OF REGRESSIONS

Population Age Group 1960	=	Percent of Population 1950 (Age Group) (Persistence Rates)		+	Persons Per Add'l Hsehold (1950-60)	+	Arbitrary Constant	Std. Error	
								No.	%
All ages		89.8%	(all ages)		3.950		2,604	2,409	2.8%
0-4		9.1%	(5 on)		.665		797	943	10.0%
5-9		9.6%	(10 on)		.560		912	925	10.4%
10-14		81.8%	(0-4)		.356		274	337	4.1%
15-19		75.1%	(5-9)		.307		282	457	6.8%
20-24		57.5%	(10-14)		.359		126	443	9.0%
25-29		63.5%	(15-19)		.376		-51	438	8.7%
30-34		73.9%	(20-24)		.354		144	423	7.1%
35-39		75.4%	(25-29)		.340		226	291	4.6%
40-44		79.8%	(30-34)		.254		175	226	3.7%
45-49		82.9%	(35-39)		.173		70	104	1.9%
50-54		80.3%	(40-44)		.141		120	151	3.1%
55-59		80.7%	(45-49)		.094		106	172	4.1%
60-64		78.2%	(50-54)		.047		89	114	3.1%
65-69		75.6%	(55-59)		.041		103	143	4.4%
70-74		66.6%	(60-64)		.035		154	128	4.9%
75 on		40.8%	(65 on)		.044		13	135	4.3%

The number of persons per additional household derived as sum of age groups totals to 4.146 or very nearly the same as the figure derived from the census tract analysis. It may also be noted that the population attributed to additional households was comprised very largely of young children and young adults showing an age distribution typical of migratory increments to suburban townships which experienced much new building in the decade of the 1950's.

This kind of analysis is thought to be most appropriate for areas large enough to include the residences of the beginning and ending populations.

It is necessary to coin a new phrase for the percentages of initial population remaining in a community when other allowance is made for increases or changes in housing supply - these percentages have been termed "persistence rates." They can be thought of as indicating the proportions of the age groups that are apt to remain in a community if household losses, i.e., by death, institutional transfer, demolition, etc., are just sufficient to balance household gains achieved through family formation, reoccupancy of old dwellings and some new construction. In this connection, it is well to note that a net gain in households depends on both old and new households. Persistence of an old household is as necessary to the establishment of a net gain as is the new occupancy of an existing or new dwelling; and household change is as much a vital statistic for a community as natural increase is for a population. Generally speaking, it would appear that some new housing construction is necessary in a community for it to maintain its population total. More is necessary for it to hold its natural increase; and still more is necessary to accommodate an in-migratory trend, barring a new trend towards families doubling up. It is typical for young adults to be more highly mobile than their parents so that if net gains in households don't occur, a community's population will tend to get rapidly older as the young people leave and smaller as the local death rate rises while the potential for births travels with the young adults.

For a constant number of households, it is indicated that in the course of a decade, the average community will lose 11 percent of its population. This 11 percent is approximately equal to 1 percent compounded annually and is consistent with an observation based on interviews in new housing developments to the effect that about 1 percent of the population each year participated in formation of new households. (Source: Abu Lughod, in Housing Choices and Housing Constraints Action Series in Housing and Community Development, McGraw Hill, 1960, p. 100.)

It will have been noted from Table II that the persistence rate for a total population is higher than that for any of the age groups over 10 (89.8 percent as compared with a range running from 40 to 83 percent). The explanation lies in the fact that while 1/3 to 1/4 of the young adult population is associated with net change in households, the remaining 2/3 to 3/4 go on providing births to the population in old households. Indeed it can be taken for granted that most of the population under 5 is resident in dwellings more than 10 years old since some 80 percent of the housing supply is in this category.

Persistence rates are a residual after the death rate and mobility have taken their toll. For the initial population under 50, mobility is by far the more important aspect of the matter. For the population between 50 and 60, the two factors are of about equal importance; and for the older population, the death rate has greater importance. Table III has been developed on the assumption that a "net remaining" rate can be calculated by dividing the persistence rate by the survival rate as published by the U. S. Bureau of the Census. The death rate is then the complement of the survival rate, and the "net departing" rate is the complement of the net remaining rate. Since there are problems of underreporting in some age groups, the anomaly of a negative death rate appears in the table; however, these would seem to be the correct rates to consider when comparing census populations.

TABLE III

TEN-YEAR AGE-SPECIFIC RATES

Age Group	Death (1)	Net Departing (2)
0-4	-.020	.200
5-9	.012	.229
10-14	.038	.340
15-19	.009	.359
20-24	-.044	.262
25-29	.004	.242
30-34	.011	.190
35-39	.050	.127
40-44	.071	.196
45-49	.078	.124
50-54	.141	.090
55-59	.129	.132
60-64	.210	.158
65 on	.536	.130

(1) Irrespective of residence (Source: U. S. Brueau of the Census, Current Population Report, P-23, No. 15, March 12, 1965).

(2) With respect to a constant number of households.

In Pennsylvania, over the last decade, the persistence rates in the aggregate appear to be quite uniform. It is assumed that they are also quite stable over time since the data have been derived from areas in all stages of development ranging from slum lands along the Delaware River, through suburbs old and new, and on into rural hinterland. All the research, however, was restricted to an era of general high level prosperity; and the estimates of future enrollment must thus be considered as assuming continuing prosperity of the sort experienced since 1950.

In order to proceed with the use of the persistence rates, it is necessary to estimate appropriate rates for five year periods. This necessity rises from two contexts. First, construction trends are apt to be quite different from one five year period to the next; one need only remember our varied history since 1950. In the early 1950's, high levels of single family house construction were achieved which, however, tailed off in the late 1950's. In the late 1950's, construction proceeded at a slower rate while the mix as between apartments and single family houses changed in favor of apartments. In the early 1960's, the apartment boom was in full swing; but by the late 1960's, it, too, tailed off; and we appear now to be in another period of slack as the mix changes back toward single family construction. Second, mobility patterns within cohort are subject to change as the cohort ages, with the most radical change apparently occuring in the 5-9 age group. Stability would appear to be its hallmark as such a cohort becomes 10-14 years old; greatly increased mobility is indicated, however, as it becomes 15-19 years old and proceeds on into the 20-24 year old age group. The reasons for such increased mobility are not hard to find since they include job seeking, family formation, military service, higher education, and likely intensification of the generation gap.

Table IV compares five and ten year persistence rates. The five-year rates have been derived from the ten year rates on the following assumption, namely: since the ten year persistence rates for the age groups 40-44 and 45-49 are nearly equal, the five year rates for these age groups are assumed equal to each other and hence to the square root of either of the ten year rates. By taking the ten year rates to be products of appropriate five year rates, the rest follows by implication since the ten year rates and one of the five year rates is given and the other five year rates can be had by division.

TABLE IV

AGE-SPECIFIC PERSISTENT RATES

Initial Age Group	Ten Year	Five Year
0-4	81.8%	83.5%
5-9	75.1%	98.0%
10-14	57.5%	76.5%
15-19	63.5%	75.0%
20-24	73.9%	84.8%
25-29	75.4%	87.2%
30-34	79.8%	86.5%
35-39	82.9%	92.5%
40-44	80.3%	89.5%
45-49	80.7%	89.5%
50-54	78.2%	90.0%
55-59	75.6%	87.0%
60-64	66.6%	87.0%
65 on	40.8%	75.5%

These findings are intuitively satisfying on two counts and have served as the basis for preliminary investigation. The five year rates are higher than the ten year rates and less than 1.0 minus the death rates. Secondly, the persistence rate for the youngest age group is more nearly equal the persistence rate for 20-24 year olds, which would seem to be biologically appropriate. HOwever, there are many sets of rates which could meet these criteria; and experimentation with data from rural areas appears to indicate that the five year rates for the first three age groups should be modified to secure a more reasonable fit between 1960 census data and enrollments for 1964-65. The persistence rates employed in the estimating procedure are as follows:

TABLE V

ADJUSTED FIVE YEAR PERSISTENCE RATES

Age Group	Persistence Rate
0-4	.88
5-9	.95
10-14	.93

The age distribution of population attributable to household changes is probably less stable over time. Obviously, these latter averages will vary from community to community according to whether household changes are mostly in single family units or apartments. In addition, if the new single family housing in a community is quite expensive, families moving into it will likely be of mature size since it takes considerable time for a family to come to afford such housing. In the decade of the 1950's, a great deal of new housing was provided for young, new families. In the present decade, a great deal of new housing appears to be in response to income and social changes as some of the new families of the 1950's find they can now move up to more luxurious housing and prefer to leave more central locations.

In one Bucks County school district about 1.85 pupils per new dwelling are expected nowadays, and this figure is above the average indicated in age groups 0-14, based on the data of 10 years ago when 1.581 potential pupils per new house might have been expected (1.581 is the sum of .665, .560, and .356 - see Table II). Families bringing in 1.85 pupils, however, probably bring in fewer pre-school children than young families having a weaker immediate impact on a school district.

Accommodation has been made to these changing circumstances by tailoring the allowances for population per additional household as follows:

TABLE VI

ESTIMATED POPULATION PER ADDITIONAL HOUSEHOLD

	1950-60	1960-65	1965-70	1970-75
Total	4.1	4.3	4.5	4.3
Ages 5-19	1.223	1.61	1.7	1.41
Ages 0-4	.665	.5	.4	.6

Prospective birthrates and volumes are not much of a problem as regards five year estimates of enrollment trends since it takes five years for the newborn to get into the school system. Within this planning horizon, enrollment trends are subject only to variations among those already born. Aside from the effects of changes in number of households, the preschool population of 1970 has been estimated as 9 percent of the population of 1965; and the preschool population of 1975 has been estimated as 10 percent of the population of 1970. The low percentage applied to the 1965 population relates to the historic decline in births recorded over the past several years. The higher percentages applied to the 1970 population relates to the rapidly increasing numbers of people in the young parent age groups, which has already begun.

This method of analysis can be thought of as combining two methods of estimate recommended by the Census Bureau. One Census Bureau method of estimate relies on concepts of natural increase and net migration, examining elementary school enrollment trends to calibrate the allowance for migration. Another relies more basically on housing trends and is preferred where housing statistics are thought to be highly reliable. This method of analysis uses school enrollment trends to estimate household changes and then estimates a component of net migration in correspondence with the estimated household change. Two components of net migration are calculated in this analysis: a net outward component related to population size and a further net figure, inward or outward, depending on household growth or decline.

In quite a general way, it does seem that this method of analysis, tends to reconcile divergent observations of demographers and school personnel. As indicated, school planners have noted enrollment increases as high as 1.85 pupils per new dwelling. Demographers, on the other hand, have noted that communities as a whole don't long sustain enrollments greater than 1.0 to 1.2 pupils per dwelling. In many areas, new dwellings are virtually synonymous with additional households; and when account is taken of population transfers from original to expanded housing supplies, the observations appear not to be consistent.

It is worth noting that the computer program which incorporates the elements of this estimating procedure has yielded credible results for suburban and rural districts. It has not been tested in any large city, though data from some medium-sized boroughs has proved tractable.

The assumed relations between present experience and future prospects are worth some special note.

The expected change in households in a district between 1965 and 1970 has been assumed to be equal to 5/3 of the change indicated as between 1965 and 1968, whether the indicated change is positive or negative. Whether this will be true depends on myriad factors, some as remote as the price of gold, others as pressing as the adoption of a new zoning policy, and some as indeterminate as the date for the end of hostilities in Viet Nam. Whatever the causes, building activity in 1968 is less intense than it was in 1966. Thus in many areas where household gains have been registered since 1965, the assumption of a constant number of new units per year will lead toward estimates that are somewhat high, although not unreasonably high, unless housing construction should take a sudden spurt in the next year as compared to this.

Since household gains in some areas probably depend on household losses in other areas, at least to some extent, the estimates may be reasonably low in areas where a steady household loss has been indicated.

In another respect, it is likely that the estimates are all somewhat high, though again, not unreasonably so. If it is true that all school systems are crowded in some degree at the present time, as is perhaps indicated by the increasing percentage of children attending public school, then it would seem that some slack, particularly in the private school system, will develop if the present public share holds constant while the current shortage of preschool children matures to the elementary school level. This slack will become more evident if private school financial resources are increasingly agumented by public contributions. It would seem reasonable to estimate some decline in the public share over the next five years. Demographic factors, however, have an uncertain impact on social customs and attitudes so that it seems reasonably prudent not to count on such a lightening of the public task.

Introduction to Analytical Procedures

Even though the data base required for the development of estimates is narrowly restricted, the necessary data may not be readily at hand or even feasibly obtainable, especially the geographic distribution of enrollments in private schools three or four years ago. In some public school districts it may be necessary to unravel a considerable history of combinations and jointures to arrive at an accurate statement of enrollments generated in the areas presently within a district's jurisdiction.

Assume that accurate information is available only with regard to the following:

(1) Age distribution (1960) for groups 0-4, 5-14, 15-24;

(2) Total public school enrollment for 1964-65 (ADM), and fall enrollments 1967 and 1968; and

(3) Private school enrollment of district residents, 1968.

The following accommodations can be made:

(1) County age distributions are, in all cases, available by five year age groups. Estimate the local distribution by five year age groups in accordance with what is reported for the County, that is, if 52 percent of the County's 5-14 year olds were 5-9 years old, assume that 52 percent of the district's 5-14 year olds were 5-9 years old.

(2) Use the 1964-65 ADM figure as an estimate of enrollment distribution as of April 1965. This may be done by inserting these figures twice where fall enrollments are called for in the program for years 1964 and 1965.

(3) There has been a state-wide trend leading to higher proportions of pupils in the public schools. For lack of better district information, it is reasonable, at least in some areas, to assume that private school enrollments have held constant between 1967 and 1968. It also accords with the limited number of observations available to assume that the public share has increased by 2 percent as between spring 1965 and spring 1968. An option in the program has been created for use where these generalities seem to be reasonably appropriate. According to this option, total enrollments for spring 1965 are calculated as a function of public school enrollment and the estimated percentage of pupils attending public school. Without the option, total

enrollments are calculated as the sum of reported public and private enrollments.

A lack of information on births or the inappropriateness of birth trends as reported does not affect the calculating procedure since whatever birth information is inserted is merely summed by five year periods and printed out. The computer program will run if, when information on births is called for, ten zero's are inserted.

In what follows, the calculating procedure is given first as a manual procedure that can be completed with worksheets and an office calculator, and secondly as an automated procedure using the computer program which has produced the results discussed above.

Manual Procedure

Enrollment Analysis

1. Calculate total enrollments by grade for 1964-65, 1965-66, 1967-68, 1968-69. (See Enrollment Data Sheet.)

2. Sum total enrollments only by grade groups 1-3, 4-6, 7-9, 10-12.

3. Average total enrollment by grade group for estimate of spring enrollments - 1965 and 1968.

4. Calculate public share of total by individual grade for 1968-69.

5. Summary of necessary estimates:

Spring Enrollment

Grades	1965	1968
1-3	E(65,1)	E(68.1)
4-6	E(65,2)	E(68,2)
7-9	E(65,3)	E(68,3)
10-12	E(65,4)	E(68,4)

Public Share 1968-1969

Grade	Percent Public
1	Pct. (1)
2	Pct. (2)
3	Pct. (3)
4	Pct. (4)
5	Pct. (5)
6	Pct. (6)
7	Pct. (7)
8	Pct. (8)
9	Pct. (9)
10	Pct. (10)
11	Pct. (11)
12	Pct. (12)

6. Estimate 1965 and 1968 age distributions from spring enrollments. Spring enrollments must be used in conjunction with the census report of distribution of ages by grade since the census is taken in April and about half the school children will have birthdays between September and April. Age groups are noted as follows: A(65,1) for 1965's 0-4 year olds; A(65,2) for 1965's 5-9 year olds; etc. The necessary calculations are shown below:

$$1.379\ E(65,1) + .242\ E(65,2) + 0.0\ E(65,3) + 0.0\ E(65,4) = A(65,2)$$

$$.021\ E(65,1) + .770\ E(65,2) + .875\ E(65,3) + .029\ E(65,4) = A(65,3)$$

$$.006\ E(65,1) + .006\ E(65,2) + .138\ E(65,3) + 1.595\ E(65,4) = A(65,4)$$

Repeat, using same factors with 1968 enrollments to yield 1968 age distribution: A(68,2); A(68,3); etc. In matrix algebra, the calculations may be shown more compactly as follows:

ENROLLMENT DATA SHEET

Fall Figures

Grade	1964-65			1965-66			1967-68			1968-69		
	Pub	Pvt	Tot	Pub	Pvt	Tot	Pub	Pvt	Tot	Pub	Pvt	Tot
K												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

Grade	Pub	Pvt	Tot	Pub	Pvt	Tot	Pub	Pvt	Tot	Pub	Pvt	Tot
1-3	x	x	____	x	x	____	x	x	____	x	x	____
4-6	x	x	____	x	x	____	x	x	____	x	x	____
7-9	x	x	____	x	x	____	x	x	____	x	x	____
10-12	x	x	____	x	x	____	x	x	____	x	x	____

Note: See text, if data by grade are not available for all years.

Population Analysis

1. From the 1960 Census, summarize municipal data to yield the school district's age distribution for groups 0-4, 5-9, 10-14, and 15-19, and total. These will be noted P(60,1), P(60,2), P(60,3) and P(60,4) for the five year groups and TP(60) for the total population.

2. Derive an estimate of residual population by application of persistence rates and compare with the estimates of actual age distribution from the enrollment data to find the differences, for instance, D(60-65,2) and sum the differences.

   $.88\ P(60,1) = P(65,2) \qquad A(65,2) - P(65,2) = D(60\text{-}65,2)$

   $.95\ P(60,2) = P(65,3) \qquad A(65,3) - P(65,3) = D(60\text{-}65,3)$

   $.93\ P(60,3) = P(65,4) \qquad A(65,4) - P(65,4) = \underline{D(60\text{-}65,4)}$

   Total Difference TD(60-65)

3. Estimate household change as $TD(60\text{-}65) / 1.61 = H(1)$.

4. Estimate total population and preschool population, 1965, as:

   $.95\ TP(60) + 4.3\ H(1) = TP(65)$

   $.10\ TP(60) + .5\ H(1) = A(65,1)$

5. Extend the analysis to 1970 as follows:

   a. $.88\ A(65,1) = P(70,2)$
      $.95\ A(65,2) = P(70,3)$
      $.93\ A(65,3) = P(70,4)$

   b. $.4\ A(65,2) + .6\ P(70,2) = P(68,2)$
      $.4\ A(65,3) + .6\ P(70,3) = P(68,3)$
      $.4\ A(65,4) + .6\ P(70,4) = p(68,4)$

   c. $A(65,2) - P(68,2) = D(65\text{-}68,2)$
      $A(68,3) - P(68,3) = D(65\text{-}68,3)$
      $A(68,4) - P(68,4) = D(65\text{-}68,4)$

   d. $1.67\ (D(65\text{-}68,2)) = D(65\text{-}70,2)$
      $1.67\ (D(65\text{-}68,3)) = D(65\text{-}70,3)$
      $1.67\ (D(65\text{-}68,4)) = \underline{D(65\text{-}70,4)}$
      Total Difference TD (65-70)

   e. Estimate household change as $TD(65\text{-}70) / 1.70 = H(2)$

f. Estimate school ages 1970 as:

$A(65,2) + D(65-70,2) = A(70,2)$
$A(65,3) + D(65-70,3) = A(70,3)$
$A(65,4) + D(65-70,4) = A(70,4)$

g. Estimate total and preschool population 1970 as:

$.95\ TP(65) + 4.5\ H(2) = TP(70)$
$.09\ TP(65) + 0.4\ H(2) = A(70,1)$

6. Extend analysis to 1975 as follows:

a. If H(2) is a minus number, multiply by -.8 to estimate H(3), i.e., $-.8\ H(2) = H(3)$ (answer will be positive). If H(2) is a positive number, multiply by 1.2 to estimate H(3), i.e., $1.2\ H(2) = H(3)$, or from independent analysis based on land use, regional position, highway plans, etc., assign a reasonable value to H(3) to indicate expected household gain 1970-75.

b. Estimate 1975 population as follows:

$.10\ TP(70) + .60\ H(3) = (A(75,1)$
$.88\ A(70,1) + .56\ H(3) = A(75,2)$
$.95\ A(70,2) + .45\ H(3) = A(75,3)$
$.93\ A(70,3) + .40\ H(3) = A(75,4)$

$.95\ TP(70) + 4.3\ H(3) = TP(75)$

Enrollment Estimates

1. From the preceding analysis, fill in the following table:

Ages	1968	1969	1970	1971	1972	1973	1974	1975
5-9	A(68,2)		A(70,2)					A(75,2)
10-14	A(68,3)		A(70,3)					A(75,3)
15-19	A(68,4)		A(70,4)					A(75,4)

Estimate age distributions for intervening years by interpolation, i.e., $(A(68,2) + A(70,2)) / 2 = A(69,2)$. etc.

2. Estimate total enrollments by grade group as follows: (Taking 1968 as an example - this calculation provides estimates nominally for the spring of each year.)

$$
\begin{aligned}
.6055\,A(69,2) + .0139\,A(69,3) + .0062\,A(69,4) &= E(69,1)\\
.1368\,A(69,2) + .4747\,A(69,3) + .0062\,A(69,4) &= E(69,2)\\
.0000\,A(69,2) + .4759\,A(69,3) + .1120\,A(69,4) &= E(69,3)\\
.0000\,A(69,2) + .0128\,A(69,3) + .5615\,A(69,4) &= E(69,4)
\end{aligned}
$$

3. List the results in a table of spring enrollment estimates.

Grades	1968	1969	1970	1971	1972	1973	1974	1975
1-3	E(68,1)	E(69,1)	E(70,1)					E(75,1)
4-6	E(68,2)	E(69,2)	E(70,2)					E(75,2)
7-9	E(68,3)	E(69,3)	E(70,3)					E(75,3)
10-12	E(68,4)	E(69,4)	E(70,4)					E(75,4)

4. Make a similar table for fall enrollments by averaging the figures for consecutive years.

5. Estimate future first grade enrollments as 1/3 of enrollments in grades 1-3.

6. Make a preliminary estimate of next fall's enrollments for all grades by applying retention ratios as follows:

Grade	1968	1969	Grade
		(1/3 E(69,1))	1
1	( ) x .99 =	( )	2
2	( ) x .99 =	( )	3
3	( ) x .99 =	( )	4
4	( ) x .99 =	( )	5
5	( ) x .99 =	( )	6
6	( ) x .99 =	( )	7
7	( ) x .98 =	( )	8
8	( ) x .97 =	( )	9
9	( ) x .97 =	( )	10
10	( ) x .96 =	( )	11
11	( ) x .95 =	( )	12

7. Sum up by grade groups 1-3, 4-6, 7-9, 10-12 and compare with estimates for the grade groups. Adjust the

preliminary estimate by adding or subtracting 1/3 of the grade group differences to each grade in the group.

8. Continue with a preliminary and a final estimate for each succeeding year. Do not run the retention ratios through for all years and then make adjustments all at once.

9. Reduce the estimates by calculating a public share either by use of the factors listed as Pct(1), Pct(2)... Pct(12) or after consultation with the administrator of private schools in the district.

10. Estimate kindergarten enrollments as percent of first grade enrollments, reflecting ancitipated changes in program level, if any.

Automated Procedure

On the pages which follow are instructions for making the calculations required to generate estimates of future enrollments through computer output. Comments on what the various parts of the computer program are intended to do are keyed in by line number. The notation is in Quiktran, IBM's language for "conversational" use of a computer. One uses an electric typewriter to enter data, and the computer responds by causing the answer to be printed out on the typewriter. The program language is closely similar to Fortran and so the program can be readily adapted to computers utilizing information on punched cards. This section is for the convenience of programmers, but may be of interest to others.

The development of the program illustrated consists largely of naming tables of numbers, identifying the position of each number, inserting some numbers to begin with, and defining the numbers wanted in terms of what has been entered. One might instruct the machine:

1. Locate some number in position A(1,2), i.e., READ A(1,2).

2. Make a number in position B(3) twice what you have in position A(1,2), i.e., B(3) = 2.0*A(1,2).

3. Give the answer, i.e., PRINT B(3).

4. Stop.

The double subscript in Table A might refer to the second grade enrollment in the first year considered. Generally, in the program which follows, if data are incorporated or used year by year, the first subscript will refer to the year. Age distribution and enrollment data and births are read in specifically for each district. Other numbers in the program, such as the persistence rates, are for use any time the program is run; and these are listed in the Addendum.

When 1969 enrollment data are available, the extrapolation to estimate household change 1965-70 will be by a factor of 1.25 instead of 1.67 (line number 183). The enrollment inputs will then refer to 1964 and 1965 and 1968 and 1969. It will be unnecessary to interpolate for estimates previous to 1971 and various adjustments will have to be made in the range of operations of subscripts, some column headings will also need to be changes. Results of the 1970 census will probably warrant changes in some of the estimating parameters.

Program Explanation (Lines 101-125)

The DIMENSION statements at the beginning of the program list the tables of data to be worked with. The first five tables are to include data particular to the school district for which enrollments are being entered:

(1) Name: Name of the school district. Abbreviate, if necessary, so that no more than 36 letters and spaces are employed.

(2) Births: Secure from the State Department of Health a listing of births reported for all municipalities in the district and sum them for the district total. The department's information by municipality extends only back to 1961. For 1960, either repeat the 1961 figure or use the census report for population under 1 as of 1960. For 1968 and 1969, repeat the 1967 figure. Ten entries are wanted to correspond with the years 1960 to 1969 inclusive.

(3) Pubenr: Data is wanted on resident (household) student enrollments in district's own schools by grade and year for the years 1964-65, 1965-66, 1967-68, and 1968-69.

(4) Pvtenr: Similar data is wanted for all other resident (household) students attending schools other than the district's own schools.

(5) Agedns: The first column of figures in this table is derived from the U. S. Census of Population, 1960 and includes age groups 0-4, 5-9, 10-14, and, finally, the total population of the district.

The next three tables are derived directly from the tables of public and private enrollments.

(1) Totenr: The first four columns of this table are the sum of the corresponding items in the tables of public and private enrollments.

(2) Pctpub: This table contains the percentages of total enrollment, by grade and year, in the public schools.

(3) Rptenr: This table contains estimates of spring enrollment by grade group for the years 1965 and 1968 and is derived as the average of fall enrollments for 1964-65 and 1965-66 for spring 1965 and of fall enrollments for 1967-68 and 1968-69 for the spring of 1968.

The remaining entries in the above tables and in the following are derived in the course of calculations:

(1) Hsginc: Estimated increase in households, 1960-65, 1965-70, and 1970-75. The calculation of household change will be affected if private school enrollments have not previously been recorded and some of the students transfer to public school. While housing data and the means of estimate are not exact enough to allow a precise numerical check, if large changes are indicated and there is no impression of extensive building or changing vacancy rates, it might be well to adjust the estimate of new households derived for the 1970's in line with the expectations of knowledgeable people in the community.

(2) Chgpop: This table lists the change in school and preschool age population associated with the estimated changes in number of households for 1960-65, 1965-70. In the output, in either column of this table the figures should be of the same sign (plus or minus), unless the numbers themselves are not much different from zero. One might tolerate differences in sign if the numbers are not more than 5 percent of the affected age group. If in reading down a column, large numbers, say, over 100, are encountered with some but not all being of one sign, say, positive, it is an indication either that the data have not been properly defined or that the district's growth is not closely enough approximated by this scheme of calculations for the estimates of future enrollment to be considered reliable, without further investigation.

(3) Pupage: This table contains the annual estimates of school age population by five year age group. It is

derived from the table "agedns", which contains the information 1968, 1970, and 1975, on the assumption that if an age group is estimated to increase from one of these years to the next, the increase will be uniform at so many persons per year in the interim. This table is the basis for estimating each year's enrollment by grade groups 1-3, 4-6, 7-9, and 10-12.

(4) Totenr: The last seven columns in this table contain estimates of the district's own enrollment.

(5) Estenr: This table contains estimates of the district's public school enrollment and has been derived on the assumption that the public share of total enrollment reported in 1968-69 will remain constant. With the general decline in elementary enrollments creating relative slack in the school systems and with the possibility of increasing state aid to private schools, it would seem likely that the public share of total will likely decline somewhat so that, if all else is accurate, these estimates of public enrollment will in general be slightly high.

The following tables include factors which interrelate population, housing, and school enrollment data:

(1) Ageopr: This table defines the assignment of school enrollment to age groups. The factors employed take into account the members of the age groups who do not attend school in grades 1-12. Thus, 5-9 year olds are partly estimated by multiplying the total in grades 1-3 by approximately 11/8 since many 5-9 year olds (as of April) are in kindergarten or not in school at all. About 1/4 of grades 4-6 are also in this group. By and large, school enrollments include about 75 percent of the 5-9 year olds, 98 percent of the 10-14 year olds, and about 69 percent of the 15-19 year olds. A small percentage of the 20-24 year olds also go to high school; however, questions of institutional enrollment arise in connection with this age group so that it has not been included in the procedure for estimating non-institutional enrollments.

(2) Enropr: This table defines the assignment of age groups to grade groups, i.e., about 3/5ths of 5-9 year olds can be expected in grades 1-3 along with about 1/7th of the 10-14 year olds.

(3) Hsgage: This table indicates the persons per additional household by age group expected to come with the new households of the early 1970's.

(4) Srvxm: This table includes the proportions of the school age population that may be expected to remain in a community if there is no change in the number of households in the community for a five year period. The proportions are all less than one since housing demand is generally on an increase and some persons will move elsewhere if households do not increase locally.

(5) Rpct: This table includes retention ratios which are intended to apply if the number of households is constant. Empirically derived public school retention ratios reflect not only the aging of a given population but also migration and transfers back and forth between the public and private schools. They are thus not appropriate for total enrollments under conditions of household stability.

Tabs is a table of marginal labels for the final print-out.

PROGRAM PRINTOUT (LINES 101-125)

```
101.  =    CF          PROGRAM KIDS5
102.  =                DIMENSION NAME(6),BIRTHS(10),PUBENR(4,13),PVTENR(4,13),
                       AGEDNS(5,5)
103.  =                DIMENSION TOTENR(11,18),PCTPUB(4,13),RPTENR(2,4)
104.  =                DIMENSION HSGINC(3),CHGPOP(2,4),PUPAGE(8,4),ESTENR(11,18)
105.  =                DIMENSION AGEOPR(4,3),ENROPR(3,4),HSGAGE(4),SRVXM(3),RPCT(11)
106.  =                DIMENSION TABS(3,10)
107.  =                GO TO 7
108.  =              1 CALL COPY(1+1,1+1)
109.  =    *ENTER AGEOPR(4,3) AND ENROPR(3,4)
110.  =                DO 2 I=1,4
111.  =    CF          READ 0,(AGEOPR(I,J),J=1,3)
112.  =              2 CONTINUE
113.                   DO 3 I=1,3
114.  =    CF          READ 0,(ENROPR(I,J),J=1,4)
115.  =              3 CONTINUE
116.  =              4 CALL COPY(4+1,4+1)
117.  =    *ENTER TAB LABELS
118.  =                DO 5 I=1,3
119.  =              5 READ 60,(TABS(I,J),J=1,10)
120.  =             60 FORMAT(10A6)
121.  =              6 CALL COPY(6+1,6+1)
122.  =    *ENTER HSGAGE(4),SRVXM(3),RPCT(11)
123.  =    CF          READ 0,(HSGAGE(J),J=1,4)
124.  =    CF          READ 0,(SRVXM(J),J=1,3)
125.  =    CF          READ 0,(RPCT(J),J=1,11)
```

Program Explanation (Lines 126-146)

These are input statements, roughly equivalent to punching the keys on an adding machine. The equal sign "=" is an instruction to give a number some value or a set of values, not a statement, as in algebra, that some number has an implied value. If data on private school enrollments is not available for 1964 or 1965, enter zeros and include program lines 153.2 to 153.7. If available for only one of these years, insert the information twice as if no change were reported and exclude lines 153.2 to 153.7. If zero enrollments are true for 1964 and 1965, enter them and exclude the program option in lines 153.2 to 153.7.

PROGRAM PRINTOUT (LINES 126-146)

```
126.   =         7   CALL COPY(7+1,7+1)
127.   =    *ENTER DISTRICT NAME
128.   =             READ 8,(NAME(J),J=1,6)
129.   =         8   FORMAT(6A6)
130.   =         9   CALL COPY(9+1,9+1)
131.   =    *ENTER PUB. SCH. ENR.  64/5, 65/6, 67/8, 68/9, ONE LINE PER YR.K,1,
                     2...12 AS C      XX./XX./..
132.   =             DO 10 I=1,4
133.   =    CF       READ 0,(PUBENR(I,J),J=1,13)
134.   =        10   CONTINUE
135.   =        11   CALL COPY(11+1,11+1)
136.   =    *ENTER PVT. ENR. K-12, FOR SAME YEARS
137.   =             DO 12 I=1,4
138.   =    CF       READ 0,(PVTENR(I,J),J=1,13)
139.   =        12   CONTINUE
140.   =        15   CALL COPY(15+1,15+1)
141.   =    *ENTER L960 AGE DISTRIBUTION,0-4,5-9,10-14,15-19,AND TOTAL
142.   =    CF       READ 0,(AGEDNS(1,J),J=1,5)
143.   =       115   CALL COPY(115+1,115+1)
144.   =    *ENTER BIRTHS(10),L960,L961,...1969
145.   =    CF       READ 0,(BIRTHS(J),J=1,10)
146.   =             CALL SAVE
```

Program Explanation (Lines 147-189)

1. Lines 147 to 153 - Defines values in the first four columns of totenr as the sum of corresponding elements in pubenr and pvtenr. Calculates public enrollment as percentage of total enrollment. "*" symbolizes multiplication; "/" symbolizes division.

2. Lines 153.2 to 153.7 - See end of program.

3. Lines 154 to 159 - Aggregates the enrollment figures by grade group 1-3, 4-6, etc.

4. Lines 160 to 162 - Puts estimates of spring enrollments 1965, and 1968 for the grade groups into rptenr (reported enrollemnt).

5. Lines 163 to 168 - Derives the age distributions which generated the spring enrollments of 1965 and 1968.

6. Lines 169 to 173 - Defines the population change expected under conditions of five years' aging and household stability and from this the remaining population change, which is attributed to change in the number of households in the community.

7. Line 174 - Estimates household change 1960-65 assuming 1.61 school-age children on the average per household.

8. Line 175 - Estimates 1965 total population in accordance with 1960 population and estimated household change.

9. Lines 176 and 177 - Estimates preschool population 1965 as 10% of the total popualtion in 1960 plus half the estimated household increase 1960-65.

10. Lines 178 to 181 - Estimates residual population as of spring 1968, after three years' aging, by interpolation between the 1965 population and the estimated effect of five years' change under conditions of household constancy.

11. Lines 182 to 186 - Extrapolate the population change associated with household change from a three year estimate to a five year estimate and estimates household increase on the basis of 1.7 school age children per household.

12. Lines 187 to 189 - Estimates total and preschool populations for 1970.

PROGRAM PRINTOUT (LINES 147-189)

```
147.   =            DO 17 I=1,11
148.   =            DO 17 J=14,18
149.   =        17  TOTENR(I,J)=0.
150.   =            DO 16 I=1,4
151.   =            DO 16 J=1,13
152.   =            TOTENR(I,J)=PUBENR(I,J)+PVTENR(I,J)
153.   =        16  PCTPUB(I,J)=PUBENR(I,J)/TOTENR(I,J)
154.   =            DO 13 I=1,4
155.   =            DO 13 J=1,4
156.   =            DO 13 K=2,4
157.   =            M=J+13
158.   =            N=3*J+K-3
159.   =        13  TOTENR(I,M)=TOTENR(I,M)+TOTENR(I,N)
160.   =            DO 14 J=1,4
161.   =            RPTENR(1,J)=(TOTENR(1,J+13)+TOTER(2,J+13))/2.
162.   =        14  RPTENR(2,J)=(TOTENR(3,J+13)+TOTENR(4,J+13))/2.
163.   =            DO 18 K=1,2
164.   =            DO 18 J=2,4
165.   =            T=0.
166.   =            DO 19 I=1,4
167.   =        19  T=T+AGECPR(I,J-1)*RPTENR(K,I)
168.   =        18  AGEDNS(K+1,J)=T
169.   =            CHGPOP(1,1)=0.
170.   =            DO 20 J=1,3
171.   =            CHGPOP(1,J+1)=AGEDNS(1,J)*SRVXM(J)
172.   =            CHGPOP(1,J+1)=AGEDNS(2,J+1)-CHGPOP(1,J+1)
173.   =        20  CHGPOP(1,1)=CHGPOP(1,1)+CHGPOP(1,J+1)
174.   =            HSGINC(1)=CHGPOP(1,1)/1.61
175.   =            AGEDNS(2,5)=.95*AGEDNS(1,5)+4.3*HSGINC(1)
176.   =            AGEDNS(2,1)=.10*AGEDNS(1,5)+.5*HSGINC(1)
177.   =            CHGPOP(1,1)=.5*HSGINC(1)
178.   =            CHGPOP(2,1)=0.
179.   =            DO 22 J=1,3
180.   =            AGEDNS(4,J+1)=AGEDNS(2,J)*SRVXM(J)
181.   =        22  CHGPOP(2,J+1)=.4*AGEDNS(2,J+1)+.6*AGEDNS(4,J+1)
182.   =            DO 23 J=2,4
183.   =            CHGPOP(2,J)=1.67*(AGEDNS(3,J)-CHGPOP(2,J))
184.   =            AGEDNS(4,J)=AGEDNS(4,J)+CHGPOP(2,J)
185.   =        23  CHGPOP(2,1)=CHGPOP(2,1)+CHGPOP(2,J)
186.   =            HSGINC(2)=CHGPOP(2,1)/1.7
187.   =            AGEDNS(4,5)=.95*AGEDNS(2,5)+4.5*HSGINC(2)
188.   =            AGEDNS(4,1)=.09*AGEDNS(2,5)+.4*HSGINC(2)
189.   =            CHGPOP(2,1)=.4*HSGINC(2)
```

Program Explanation (Lines 190-239)

1. Lines 190 to 193 - Estimates household gains for any district in 1970-75. If there has been a loss estimated for 1965-70, the gain is estimated as 80 percent of the absolute value of the loss. If there has been a previous gain, a gain of 20 percent greater is estimated.

2. Lines 194 to 197 - Estimates school and preschool populations for 1975.

3. Lines 198 to 208 - Estimates pupil age groups for each year by interpolation between 1968 and 1970 and between 1970 and 1975.

4. Lines 209 to 214 - Estimates total enrollments by grade groups 1-3, 4-6, 7-9, and 10-12 apt to be generated by these age distributions.

5. Lines 215 and 216 - Estimates prospective first grade enrollments as 1/3 of prospective enrollments in grades 1-3 in preparation for application of retention ratios.

6. Lines 217 to 227 - Extends irregularities in present enrollment distribution by application of retention ratios and modifies this extension in line with enrollment changes due to changes in number of households.

7. Lines 234 and 235 - Estimates kindergarten enrollments in proportion to current first grade enrollments. This procedure is necessary in general because some districts have instituted kindergarten programs for the first time this year, while others have expanded their kindergarten programs since 1965. The result of this procedure is to estimate no kindergarten enrollments in districts not yet having such a program. If such a program is anticipated, one of the methods of estimating suggested in the previous section can be applied by referring to estimated total first grade enrollments and making allowance for a percentage not to attend the public kindergarten.

8. Lines 236 to 239 - Sums total enrollment in grades 1-12.

PROGRAM PRINTOUT (LINES 190-239)

```
190.   =          IF(HSGINC(2)-0.)24,25,25
191.   =      24  HSGINC(3)=-(.8*HSGINC(2))
192.   =          GO TO 26
193.   =      25  HSGINC(3)=1.2*HSGINC(2)
194.   =      26  DO 27 J=1,3
195.   =      27  AGEDNS(5,J+1)=AGEDNS(4,J)*SRVXM(J)+HSGINC(3)*HSGAGE(J+1)
196.   =          AGEDNS(5,1)=.10*AGEDNS(4,5)+.6*HSGINC(3)
197.   =          AGEDNS(5,5)=.95*AGEDNS(4,5)+4.3*HSGINC(3)
198.   =          DO 28 J=1,4
199.   =          PUPAGE(1,J)=AGEDNS(3,J)
200.   =          PUPAGE(3,J)=AGEDNS(4,J)
201.   =          PUPAGE(8,J)=AGEDNS(5,J)
202.   =      28  PUPAGE(2,J)=.5*PUPAGE(1,J)+.5*PUPAGE(3,J)
203.   =          DO 29 J=1,4
204.   =          DO 29 K=2,5
205.   =          X=K
206.   =          Y=1.2-.2*X
207.   =          Z=.2*X-.2
208.   =      29  PUPAGE(K+2,J)=Y*PUPAGE(3,J)+Z*PUPAGE(8,J)
209.   =          DO 30 K=2,8
210.   =          DO 30 J=1,4
211.   =          T=0.
212.   =          DO 31 I=1,3
213.   =      31  T=T+ENROPR(I,J)*PUPAGE(K,I+1)
214.   =      30  TOTENR(K+3,J+13)=T
215.   =          DO 32 I=5,11
216.   =          TOTENR(I,2)=.33*TOTENR(I,14)
217.   =          DO 33 J=2,12
218.   =      33  TOTENR(I,J+1)=RPCT(J-1)*TOTENR(I-1,J)
219.   =          DO 32 K=1,4
220.   =          TOTENR(I,18)=0.
221.   =          DO 35 L=2,4
222.   =          M=3*K+L-3
223.   =      35  TOTENR(I,18)=TOTENR(I,18)+TOTENR(I,M)
224.   =          DO 32 N=2,4
225.   =          NX=K+13
226.   =          MX=3*K+N-3
227.   =      32  TOTENR(I,MX)=TOTENR(I,MX)+TOTENR(I,NX)-TOTENR(I,18))/3.
234.   =          DO 37 I=5,11
235.   =      37  TOTENR(I,1)=TOTENR(I,2)*TOTENR(4,1)/TOTENR(4,2)
236.   =          DO 38 I=3,11
237.   =          TOTENR(I,18)=0.
238.   =          DO 38 J=14,17
239.   =      38  TOTENR(I,18)=TOTENR(I,18)+TOTENR(I,J)
```

Program Explanation (Lines 240-341)

1. Lines 240 to 242 - Translates the estimates of spring total enrollment back to estimates of fall enrollment by averaging the estimates for consecutive years.

2. Lines 243 to 257 - Estimates future public school enrollments as a percentage of future total enrollments, taking as constant the percentages appropriate to 1968-69.

3. Lines 258 to 262 - Sums reported births by five year period. Births in a five year period should sum to the population 0-4 years of age at the end of the period only under very special conditions, i.e., that the data are accurate and that the number of households is increasing strictly according to the needs of the initial population.

4. Lines 263 to 337 - The remainder of the program consists of output statements, roughly equivalent to touching the total button on an adding machine. Execution is halted to permit adjustment of paper in typewriter.

5. Lines 338 to 340 - Stops execution of program to permit insertion of independent estimate of household increase 1970-1975 in position HSGINC (3). The program can then be rerun starting with statement 26 on line 194.

6. Line 341 - Roughly equivalent to pulling the plug.

PROGRAM PRINTOUT (LINES 240-342)

```
240.  =          DO 39 J=1,18
241.  =          DO 39 I=5,10
242.  =      39  TOTENR(I,J)=(TOTENR(I+1,J)+TOTENR(I,J))/2.
243.  =          DO 40 J=1,13
244.  =          DO 41 I=1,4
245.  =      41  ESTENR(I,J)=PUBENR(I,J)
264.  =          DO 40 I=5,11
247.  =      40  ESTENR(I,J)=TOTENR(I,J)*PCTPUB(4,J)
248.  =          DO 170 I=1,11
249.  =          DO 170 J=14,18
250.  =     170  ESTENR(I,J)=0.
251.  =          DO 43 I=1,11
252.  =          DO 43 J=1,4
253.  =          DO 42 K=2,4
254.  =          M=J+13
255.  =          N=3*J+K-3
256.  =      42  ESTENR(I,M)=ESTENR(I,M)+ESTENR(I,N)
257.  =      43  ESTENR(I,18)=ESTENR(I,18)+ESTENR(I,M)
258.  =          B1=0.
259.  =          B2=0.
260.  =          DO 141 I=1,5
261.  =          B1=B1+BIRTHS(I)
262.  =     141  B2=B2+BIRTHS(I+5)
263.  =          CALL EJECT(60)
264.  =          PAUSE
265.  =     142  FORMAT(18X,6A6)
266.  =          PRINT 142,(NAME(J),J=1,6)
267.  =     140  FORMAT(1H)
268.  =          PRINT 140
269.  =          CALL HEDS6(2,8,8,3)
270.  =          PRINT 140
271.  =          PRINT 44,(TABS(1,J),J=1,2),(HSGINC(J),J=1,3)
272.  =      44  FORMAT(2A6,11X,3F10.0)
273.  =          PRINT 140
274.  =          CALL HEDS6(2,3,3,1)
275.  =          CALL HEDS6(2,7,7,1)
276.  =          DO 45 J=1,4
277.  =      45  PRINT 46,TABS(1,J+3),(CHGPOP(I,J),I=1,2)
278.  =      46  FORMAT(8X,A6,9X,2F10.0)
279.  =          PRINT 140
280.  =          PRINT 46,TABS(1,8),B1,B2
281.  =          PRINT 140
282.  =          PRINT 140
283.  =          CALL HEDS6(2,2,2,2)
284.  =          PRINT 47,TABS(1,3),(TABS(2,J),J=6,10)
285.  =      47  FORMAT(A6,12X,4(4X,A6))
286.  =          DO 49 J=1,4
287.  =      49  PRINT 48,TABS(1,J+3),(AGEDNS(I,J),I=1,2),(AGEDNS(I,J),I=4,5)
288.  =      48  FORMAT(A6,11X,4F10.0)
289.  =          PRINT 140
290.  =          PRINT 48,TABS(1,9),(AGEDNS(I,5),I=1,2),AGEDNS(I,5),I=4,5)
```

PROGRAM PRINTOUT (LINES 240-342, CONT'D.)

```
291.  =             GO TO 159
292.  =        148  PRINT 142,(NAME(J),J=1,6)
293.  =             CALL HEDS6(2,5,6,2)
294.  =             PRINT 50,TABS(1,9),(TABS(3,J),J=2,8)
295.  =         50  FORMAT(A6,7(2X,A6))
296.  =             PRINT 140
297.  =             PRINT 51,TABS(1,10),(TOTENR(I,1),I=3,9)
298.  =         51  FORMAT(A6,7F8.0)
299.  =             PRINT 140
300.  =             DO 53 J=1,12
301.  =         53  PRINT 52,J,(TOTENR(I,J+1),I=3,9)
302.  =         52  FORMAT(I3,3X,7F8.0)
301.  =         53  PRINT 52,J(TOTENR(I,J+1),I=3,9)
302.  =         52  FORMAT(13,3X,7F8.0)
303.  =             PRINT 140
304.  =             DO 54 J=1,4
305.  =         54  PRINT 51,TABS(2,J),(TOTENR(I,J+13),I=3,9)
306.  =             PRINT 140
307.  =             PRINT 51,TABS(2,5),(TCTENR(I,18),I=3,9)
308.  =             PRINT 140
309.  =             PRINT 140
310.  =             PRINT 140
311.  =             PRINT 55,(TABS(3,J),J=1,10)
312.  =         55  FORMAT(A6,7(2X,A6),1X,2A6)
313.  =             PRINT 56,TABS(1,10),(ESTENR(I,1),I=3,9),PCTPUB(4,1)
314.  =         56  FORMAT(/A6,7F8.0,F8.3/)
315.  =             DO 57 J=1,12
316.  =         57  PRINT 58,J,(ESTENR(I,J+1),I=3,9),PCTPUB(4,J+1)
317.  =         58  FORMAT(I3,3X,7F8.0,F8.3)
318.  =             PRINT 140
319.  =             DO 59 J=1,4
320.  =         59  PRINT 51,TABS(2,J),(ESTENR(I,J+13),I=3,9)
321.  =             PRINT 140
322.  =             PRINT 51,TABS(2,5),(ESTENR(I,18),I=3,9)
323.  =             CALL EJECT(60)
324.  =             GO TO 68
325.  =        159  PRINT 140
326.  =             PRINT 140
327.  =             CALL HEDS6(2,4,4,2)
328.  =             PRINT 140
329.  =             PRINT 140
330.  =             CALL HEDS6(2,9,9,2)
331.  =             PRINT 65,(PCTPUB(I,1),I=1,4)
332.  =         65  FORMAT(/21X,1HK,7X,4F6.3/)
333.  =             DO 66 J=1,12
334.  =         66  PRINT 67,J,(PCTPUB(I,J+1),I=1,4)
335.  =         67  FORMAT(20X,I2,7X,4F6.3)
336.  =             CALL EJECT(60)
337.  =             GO TO 148
338.  =         68  CALL COPY(68+1,68+1)
339.  =     *MAKE ADJUSTMENTS, IF NECESSARY, START(26)
340.  =             PAUSE
341.  =             END
```

Program Explanation (Lines 153.2-153.7)

This part of the program should be inserted only for those districts where information is not available on private school enrollments for the years 1964-65 and 1965-66. It is assumed that private school enrollments have been entered for 1967-68 and 1968-69 either as separately reported for each year or as duplicated on an assumption of no change from whichever year has been reported.

These instructions indicate that total enrollments for 1964-65 and 1965-66 are to be recalculated by dividing public school enrollments for these years by a value 1.5 percent smaller than the public share in 1967-68.

PROGRAM PRINTOUT (LINES 153.2-153.7)

```
153.2     =             DO 116 I=1,2
153.3     =             DO 116 J=2,13
153.4     =       116   TOTENR(I,J)=TOTENR(I,J)/(PCTPUB(3,J)-.015)
153.5     =             DO 117 J=2,13
153.6     =             PCTPUB(1,J)=PCTPUB(3,J)-.02
153.7     =       117   PCTPUB(2,J)=PCTPUB(3,J)-.01
```

Addendum

Estimating Parameters

1. The age operator is used to generate age groups (5-9, 10-14, 15-19) from a given list of grade groups (1-3, 4-6, 7-9, 10-12). The matrix is postmultiplied by the grade group vector.

1.379	.242	.0	.0
.021	.770	.875	.029
.006	.006	.138	1.595

2. The enrollment operator is used to generate grade groups from a given age distribution. This matrix is postmultiplied by the age group vector.

.6055	.0139	.0062
.1368	.4747	.0062
.0	.4759	.1120
.0	.0128	.5615

3. Household membership ratios associated with net change in households 1970-75.

Age Group	Hsgage
0-4	.600
5-9	.560
10-14	.450
15-19	.400

4. Persistence rates used to determine residual school age population after five years with no change in housing supply.

Age Group	Srvxm
0-4	.88
5-9	.95
10-14	.93

5. Retention rates used to estimate residual enrollments from year to year in total enrollment under conditions of a constant housing supply. These rates are not used to estimate the amount of future enrollments, which estimate is made on the basis of more general considerations, but only to preserve something of the irregularities in enrollments as most recently reported.

Grades	Rpct
1 to 2	.99
2 to 3	.99
3 to 4	.99
4 to 5	.99
5 to 6	.99
6 to 7	.99
7 to 8	.98
8 to 9	.97
9 to 10	.97
10 to 11	.96
11 to 12	.95

6. The alphameric matrix TABS consists of the following information with "x" representing blank spaces:

(j)	(i)		
	(1)	(2)	(3)
(1)	NEWxFA	x1-3xx	PUBLIC
(2)	MILIES	x4-6xx	1967xx
(3)	xAGESx	x7-9xx	1968xx
(4)	x0-4xx	10-12x	1969xx
(5)	x5-9xx	x1-12x	1970xx
(6)	10-14x	1960xx	1971xx
(7)	15-19x	1965xx	1972xx
(8)	BIRTHS	1970xx	1973xx
(9)	TOTALx	1975xx	PCT.xP
(10)	xxKxxx	xxxxxx	UBLICx

7. An alphameric matrix HEDS is contained in a subroutine HEDS6 (l,l,m,n) where k controls a GO TO statement according to whether information is to be read in or printed out, l and m provide the range for do-loops controlling which items are to be read in or printed out, and n controls whether the print out is to occur at the beginning of the line, after skipping 18 spaces, or after skipping 28 spaces. The matrix HEDS (9,6) consists of the following information:

(1) xxxxxxxxCOMMUNITYxNETxGROWTHxxxxxxxx

(2) xxxxxxxxxxxxxPOPULATIONxxxxxxxxxxxxx

(3) INDUCEDxPOPULATIONxCHANGExxxxxxxxxxx

(4) xxPUBLICxSHARExOFxTOTALxENROLLMENTxx

(5) xxxxxxxxENROLLMENTxESTIMATESxxxxxxxx

(6) xxxxxxxxxxx(FALLxFIGURES)xxxxxxxxxxx

(7) xxxxxxAGExGROUPSxxxxxxxxxxxxxxxxxxxx

(8) 1960-65xxx1965-70xxx1970-75xxxxxxxxx

(9) GRADESxxxxxxx1965xx1966xx1967xx1968x

APPENDIX E

Survey of Secondary School

Course Offerings

1968-1969

SURVEY OF SECONDARY SCHOOL COURSE OFFERINGS

1968-69

Name of District ______________________________

Telephone Number __________ County __________ Date __________

Name of Person Completing Report ______________________

DIRECTIONS

General

- Use a different sheet for each grade.

- Omit offerings which are part of the student activities program.

- If courses are open to students in different grades, course should be listed under grade in which it first becomes available, not in every grade in which it is offered. This will eliminate duplicate listings of the same course.

- Geography, psychology and other subjects which vary in departmental affiliation from school to school should be listed in the field under which each is taught, *e.g.*, science or social studies.

For Columns Under A

- Use symbols to represent each course (do not report duplicate sections) offered in a given subject such as biology, as follows:

  / when a course requires one semester to complete
  or X when a course requires both semesters to complete

- Enter each course in column for appropriate year of secondary school sequence, e.g., ninth grade English as third year of English in grades 7-12 would be entered under III; twelfth grade biology as second year biology in grades 7-12 would be entered under II.

- The number of columns in which the foregoing symbols are entered should not exceed the number of different courses and/or modifications thereof.

- In the last two columns under A indicate also the number courses meeting less than 200 minutes per week and the number of periods devoted to each.

For Columns Under B

- Place *check marks* in the appropriate column or columns to describe special provisions of courses for gifted students when such courses are shown as being offered under A.

For Industrial Arts, Vocational-Technical and Commercial Subjects

- Include only subjects offered in schools of your district; *do not count those taught in area vocational-technical schools.*

- Under proper year of sequence, *e.g.* second year of automotive shop, enter the number of *different* courses offered for a full year (2 semesters) and the number offered for a half-year (one semester).

- In the remaining columns enter the number of minutes each course in a category meets weekly. Use an asterisk to identify half-year (one semester) courses.

Example:

400* signifies 400 minutes weekly for one semester
200 signifies 200 minutes weekly for both semesters

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SURVEY OF SECONDARY SCHOO OURSE OFFERINGS* 1968-69.

School District ______________________

Grade ________

Sponsored by the Intermediate Unit Development Project at the
University of Pennsylvania Under a Grant from The United States
Office of Education

SUBJECTS	- A - COMPONENTS OF EDUCATIONAL PROGRAM																												- B - SPECIAL PROVISIONS		
	Courses Offered for 200 or More Minutes Per Week (Year of Sequence, e.g. Second Year French)																										Courses offered for less than 200 minutes per week		Unique Features of Courses for Gifted (Check where applicable)		
	First I				Second II				Third III				Fourth IV				Fifth V				Sixth VI				Advanced Placement						
	Modifications of Course				Modifications of Course				Modifications of Course				Modifications of Course				Modifications of Course				Modifications of Course				Modifications						
	Slow Learn	Regular	Col. Bound	Gifted	Slow Learn	Regular	Col. Bound	Gifted	Slow Learn	Regular	Col. Bound	Gifted	Slow Learn	Regular	Col. Bound	Gifted	Slow Learn	Regular	Col. Bound	Gifted	Slow Learn	Regular	Col. Bound	Gifted	Col. Bound	Gifted	Courses Offered	Periods Weekly	Special Seminars	Honors	Others Specify
1-5 ENGLISH																															
1 English (________) 1																															
2 Other Eng. (________) 2																															
3 (________) 3																															
4 (________) 4																															
5 (________) 5																															
6-7 READING, DEVELOPMENTAL																															
6 As Separate Course 6																															
7 Integrated With (________) 7																															
8-9 READING, REMEDIAL																															
8 As Separate Course 8																															
9 Integrated with (________) 9																															
10-17 FOREIGN LANGUAGE																															
10 Spanish 10																															
11 French 11																															
12 Latin 12																															
13 German 13																															
14 Russian 14																															
15 Other (________) 15																															
16 (________) 16																															
17 (________) 17																															
18-29 SOCIAL STUDIES																															
18 American History 18																															
19 American Civilization 19																															
20 Ancient History 20																															
21 European History 21																															
22 World History 22																															
23 Government or Problems 23																															
24 Sociology 24																															
25 Economics 25																															
26 World Culture 26																															
27 Other (________) 27																															
28 (________) 28																															
29 (________) 29																															

SUBJECTS		- A - COMPONENTS OF EDUCATIONAL PROGRAM																												- B - SPECIAL PROVISIONS		
		Courses Offered for 200 or More Minutes Per Week (Year of Sequence, e.g. Second Year French)																									Courses offered for less than 200 minutes per week		Unique Features of Courses for Gifted (Check where applicable)		
		First I				Second II				Third III				Fourth IV				Fifth V				Sixth VI				Advanced Placement						
		Modifications of Course				Modifications of Course				Modifications of Course				Modifications of Course				Modifications of Course				Modifications of Course				Modifications						
		Slow Learn	Regular	Col. Bound	Gifted	Slow Learn	Regular	Col. Bound	Gifted	Slow Learn	Regular	Col. Bound	Gifted	Slow Learn	Regular	Col. Bound	Gifted	Slow Learn	Regular	Col. Bound	Gifted	Slow Learn	Regular	Col. Bound	Gifted	Col. Bound	Gifted	Courses Offered	Periods Weekly	Special Seminars	Honors	Others Specify
30-39 SCIENCE																																
30 Biology	30																															
31 Chemistry	31																															
32 Physics	32																															
33 Physical Science	33																															
34 General Science	34																															
35 Basic or Consumer Sci.	35																															
36 Earth Science (geology, astronomy, space)	36																															
37 Other (________)	37																															
38 (________)	38																															
39 (________)	39																															
40-50 MATHEMATICS																																
40 Algebra	40																															
41 Geometry	41																															
42 Solid Geometry	42																															
43 Trigonometry	43																															
44 Calculus	44																															
45 Statistical Inference	45																															
46 Reorganized Math. (SMSG, UICSM, or other)	46																															
47 Analytical Geometry	47																															
48 Other Math. (________)	48																															
49 (________)	49																															
50 (________)	50																															
51-55 FINE ARTS																																
51 Music	51																															
52 Art	52																															
53 Other (________)	53																															
54 (________)	54																															
55 (________)	55																															
56 GENERAL HOMEMAKING	56																															
57 DRIVER TRAINING	57																															
58-59 HEALTH AND PHYS. ED.																																
58 Health	58																															
59 Physical Education	59																															
60-62 UNCLASSIFIED																																
60 (________)	60																															
61 (________)	61																															
62 (________)	62																															

Please turn to next page

IN EACH OF THE FOLLOWING CATEGORIES INDICATE NUMBER OF DIFFERENT COURSES
(Not number of sections scheduled)

SUBJECTS		Year of Sequence, e.g. First Year of Machine Shop												Number of Minutes Each Course Listed Meets Weekly (If half a year, use asterisk *)				
		First I		Second II		Third III		Fourth IV		Fifth V		Sixth VI		Course 1	Course 2	Course 3	Course 4	Course 5
		Full Year	Half Year	Full Year	Half Year	Full Year	Half Year	Full Year	Half Year	Full Year	Half Year	Full Year	Half Year					
63-73 INDUSTRIAL ARTS																		
63 General Shop	63																	
64 Wood Shop	64																	
65 Sheet Metal	65																	
66 Machine	66																	
67 Automotive	67																	
68 Printing	68																	
69 Electrical	69																	
70 Mechanical Drawing	70																	
71 Other I.A. (________)	71																	
72 (________)	72																	
73 (________)	73																	
74-81 VOCATIONAL-TECHNICAL																		
74 Vocational Home Ec.	74																	
75 Trades & Industrial	75																	
76 Agriculture	76																	
77 Distributive Education	77																	
78 Work Experience Program	78																	
79 Other Voc. (________)	79																	
80 (________)	80																	
81 (________)	81																	
82-89 COMMERCIAL SUBJECTS																		
82 Typing	82																	
83 Shorthand	83																	
84 Bookkeeping	84																	
85 Business Training	85																	
86 Bus. Machine Operation	86																	
87 Other Comm. (________)	87																	
88 (________)	88																	
89 (________)	89																	

**By Richard S. Heisler, Graduate School of Education, University of Pennsylvania*

Please check entries to see that:

- Separate forms are used for each grade
- Duplicate Sections at the same course are not counted as separate courses.

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APPENDIX F

METHODOLOGY OF REVENUE FORECASTING IN EDUCATION

Background on State and Local Government Revenue Projections

Projections are conditional statements regarding an outcome under assumed conditions. Initially we may only be able to specify assumptions somewhat more precisely than has been done in the past. After several years experience with more complete and relevant data gathering, however, our projections will be far more knowledgeable.

Revenue estimates are attempted for numerous reasons. In the context of a program, planning and budgeting system, such fiscal planning has all of the following purposes:

-To relate more closely to the demographic and economic changes occurring within the community.

-To facilitate continuing budget decisions and permit some evaluation of the effects of past decisions.

-To provide for more precise development of revenue and expenditure balances for specific future dates.

-To document requests for use of new revenue sources or additional yield from existing sources.

Major Methods of Projection

A dozen or so projection methods are presently employed in state and local government revenue studies. These break down into three general categories:

1. Extrapolation of time trend data, that is straight-line projections, which may or may not be adjusted for changes in tax rates, or price levels.

2. Projections based on an assumed relationship between a revenue source and one economical variable, such as personal income or population.

3. Econometric approaches, which instead of assuming a relationship between tax or other revenue sources and some economic factor, attempt by statistical techniques

to determine what the past relationship has been, then make projections given some assumption about the stability of this relationship. Econometric projections deal in complex relationships, often involving a set of simultaneous equations.

These methods differ substantially both in the time and effort involved in developing a projection and the data required, but perhaps not in the reliability of the results obtained.

Econometric methods require time-consuming accumulation of numerous categories of data. Much of this data may only be available on a national, state, or metropolitan level. Assumed relationships also depend on the availability and quality of projected data on the economic factor or factors selected. Under this method, revenue projections are no better than the projections of the economic variable or variables to which they are tied. Both econometric and the assumed relationship methods require considerably statistical and mathematical manipulations of data. Computer applications normally would be required.

Since the initial version of this planning, programming, and budgeting system must be susceptible of manual operation, our projection options have been sharply limited. In a completely automated PPB system far more reliance can be placed on (1) econometric and (2) assumed functional relationships. In one important sense, however, our revenue projections are the result of more than time trend data. Projections of the real estate tax, per capita tax, and basic state instructional subsidy are based on careful estimates of enrollments, population, and assessed and market value of real property.

Straight-Line Time Trend Projections

Merits and Calculation

Straight-line projections operate on the relatively simple theory that all the forces affecting revenue during a base period will continue to operate similarly in the future. In this basic form only time is significant. Straight-line projections should not be made without taking into consideration past changes in the base of the revenue source or the rate at which the tax is levied. The simplicity of this method is both its strength and weakness, yet it may produce entirely satisfactory results.

By far the most significant examination of non-federal public sector finance problems in recent years is the State-Local Finances Project of the George Washington University. In a recent examination of "Long-Range Revenue Estimation" they concluded that

> "Though the extrapolative method ignores modern economic insights, we must nevertheless admit that there is no evidence in results of studies using this method to judge it inferior to more elaborate projection models with more impressive theoretical grounding. In the present state of the art of long-range projections, simple and naive models apparently work about as well as sophisticated ones."

Yet logically the past is not a predictor of the future. Good results obtained by means of straight-line projections occur primarily because of the judgment and experience of the estimator. But as with all of the methods for projection, it is hazardous to predict beyond the range of the available data.

To illustrate application of straight-line projection, Figures I, II, and III are provided. Figures I and II present a form and the equations which can be used in calculating straight-line projections for both an odd or an even number of years; Figure III provides an example of such calculations, including some of the problems inherent in this method.

FIGURE I

STRAIGHT-LINE PROJECTIONS

(Least Squares Criterion)

(Odd Number of Years)

Y = revenue to be predicted (three significant digits)
X = time interval in years
n = number of observations (years)

Academic Year	X	Y	XY	X^2	Y^2
	-2		-	4	
	-1		-	1	
(middle year)	0		0	0	
	1		+	1	
	2		+	4	
Sum = Σ	0	ΣY	ΣXY	10	ΣY^2

$$a = Y = \frac{\Sigma Y}{n} = \frac{\Sigma Y}{5}$$

$$b = \frac{\Sigma XY}{\Sigma X^2} = \frac{\Sigma XY}{10}$$

Estimating equation: $Y_c = a + bX$, where X for next year would be 3.

Error equation: $S_y^2 = \frac{\Sigma Y^2 - (a \Sigma Y + b \Sigma XY)}{n - 1}$

$3_y = \pm \sqrt{S_y^2}$ = standard error or the appropriate range for about 65% of the errors

FIGURE II

STRAIGHT LINE PROJECTION

(Least Squares Criterion)

(Even Number of Years)

Y - values (revenues) are treated as before

X - values are treated as if referring to every other 6 months period. There is no middle year so that X values are a balanced sequence of odd numbers.

For observation on 6 years we would have the following values for X:

Academic Year	X	X^2
	-5	25
	-3	9
	-1	1
	1	1
	3	9
	5	25
Sum	0	70

$$a = \frac{\Sigma Y}{n} = \bar{Y} = \frac{\Sigma Y}{6}$$

$$b = \frac{\Sigma XY}{70}$$

$Y_c = a + bX$ where X for next year would be 7

S_y is calculated as before

FIGURE III

EXAMPLE OF LEAST SQUARES

ESTIMATE

Academic Year	X	Y*	XY	X^2	Y^2
1963-4	-3	58.4	-175.2	9	3410.56
1964-5	-1	60.8	- 60.8	1	3696.64
1965-6	+1	73.2	+ 73.2	1	5358.24
1966-7	+3	63.0	+189.0	9	3969.00
Sum	0	255.4	26.2	20	16,434.44

*Thousands of dollars (or 100's of thousdands or millions as might be appropriate). More than 3 significant digits are probably not warranted.

$$a = \frac{\Sigma Y}{4} = \frac{255.4}{4} = 63.8 \qquad b = \frac{\Sigma XY}{20} = 1.31$$

$$Y_c = a + b\,X = 63.8 + 1.31\,X$$

Estimate for 1967-68 is $63.8 + 1.31 \times 5$

$= 63.8 + 6.55$

$= 70.4$

$$S_y^2 = \frac{\Sigma Y^2 - (a\,\Sigma Y + b\,\Sigma XY)}{n - 1} = \frac{16{,}434.44 - 63.8 \times 255.4 - 1.31 \times 26.2}{3}$$

$$= \frac{105.60}{3} = 35.20$$

$$S_y = \sqrt{S_y^2} = \sqrt{35.20} = 5.94$$

Estimate for 1967-68 could be written \$70,400 ± \$5,940 indicating a range of \$64,500 - \$76,300 with a 65% chance of being accurate, other things being equal.

Comments on Figure III

In the example, the data do not follow a straight-line trend; and there is what appears to be an exceptional year, 1965-66. The analysis indicates considerable uncertainty in that twice the standard error equals about 15 percent of the estimated value. The 65 percent chance of being accurate actually refers to results to be expected if, say, such analysis were done for 100 districts. In this case, we would expect about 65 of our estimates to fall within the ranges indicated for each of the districts. Such matters are dealt with in adequate detail in standard textbooks on statistical methods and the interested reader should refer to them. M. J. Monroney's Facts From Figures is, perhaps, the most readable.

As a practical matter, it should be possible to find an assignable cause for the extraordinary good fortune experienced in 1965-66 in the example. It might relate to a bonanza from the collection of delinquent taxes. In such a case, it would be wise to discount the revenues for this year to allow only for average experience in this matter. The estimate for 1967-1968 would be lowered, but the uncertainty would be much reduced.

If least squares analysis is used to estimate revenues from individual sources, say, property tax, occupation tax, etc., then the sum of the estimates will accumulate uncertainty which can be estimated by adding the Sy^2 values and taking the square root of the sum. Such an estimate is warranted if the tax sources behave independently of each other. If the tax sources tend to rise and fall together, such an estimate of uncertainty would be an overestimate.

Criteria for the Use of Straight-Line Projections. The method of least squares illustrated in Figures I, II, and III is given this name because it minimizes the square of historical errors of estimate, while assuming that the sum of errors will be zero. As a result, sharply deviating values introduce considerable uncertainty. Thus the least squares method, and straight-line projections resulting from this method, are dangerous to accept as estimates unless the values of X and Y have been graphed and can be seen to approximate a straight line. If the data on past revenue yields for a specific source does approximate a straight line, then you can be assured that the least squares criterion finds the equation of a realistic line for estimating future revenue yields. The following criteria may help in deciding whether to employ projections derived from extrapolation of time trend data:

1. Straight-Line methods should be used only when several years of revenue data are available; five years of data

are an absolute minimum for reasonable confidence in the projections;

2. The specific years for which revenue data are available should be representative of the revenue behavior or experience of the tax source; whenever the most recent years of revenue data are not representative, adjustments should be made to assure conparability;

3. The revenue source or tax being projected should provide a reasonably significant proportion of your total revenue yield; otherwise simple judgmental projections initially are adequate; and,

4. Changes in either the rate of a tax or revenue source must be identified and taken into account; straight-line projections become more hazardous without such identification of rate changes.

These criteria are only general guides as to whether it is appropriate to use straight-line time trend projections. For extremely significant sources of revenue - such as the real estate tax - it is strongly recommended that past revenues be statistically analyzed to determine the error of estimate (how far off a straight-line projection may be).

Variations in Revenue Sources. For the three general categories of projection methods discussed, - and a variety of other economic judgemnts, individual judgments, and guesses - the major factors are (1) data availability and (2) knowledge of revenue behavior. There are numerous gaps both in this knowledge and availability. Further difficulties in revenue estimation result from the nature of revenue sources available to Pennsylvania school districts, and the degree to which school administrators can control or anticipate shifts in the base of these sources.

The bases of these revenue sources fall into four categories:

1. Bases that change as a result of relatively uncontrollable economic factors, such as sales and income taxes;

2. Bases that change as a result of the actions of the Federal and the Pennsylvania state government, including those intergovernmental transfers and subsidies which depend solely on appropriations;

3. Bases that change with growth in school district enrollment, examples being residential real estate taxes, and certain mandated state subsidies; and,

4. Bases that are altered by the direct action of the school board or administrator, such as earnings on temporary deposits. These distinctions, obvious to any school administrator must be taken into account in selecting an appropriate method of projection. But the shifting of revenue bases, as well as data gaps, needs, and availability _must be examined in terms of specific revenue sources_. While all school districts will not employ each of the revenue sources to be discussed, an effort has been made in the following discussion to examine any source which provides a significant revenue yield for any individual school district.

Projection of Specific Tax and Subsidy Sources

Real Estate and Property Tax

Reliance and Reform Proposals. Perhaps the most significant fact about local school financing in the United States is its substantial reliance on the property tax. The real estate tax is clearly the main source of local revenues for school districts in Pennsylvania. Although the market value of property is legally supposed to provide the base for this tax, in practice properties are assessed at between one-fifth and one-third of their market value for tax purposes. Unlike income and sales taxes, the yield of the property tax is not uniquely defined by law, nor does it respond automatically to economic change. Administrative problems and political difficulties involved in reassessing properties are such that assessments, once established, tend to remain relatively fixed.

In periods of inflation, market values rise so that assessed values tend to decline as a percentage of market value. Revenues derived from the real estate tax, based on assessed value, tend to lose purchasing power unless inflationary trends are reflected in the millage rate. State aid, in addition to the real estate tax, is also dependent on market values, which explains the considerable depth and discussion provided here and in Table I on developing valid means for projecting the market value of real property.

State aid, however, declines where market values rise unusually fast. School districts are thus twice vulnerable to the stability of their real estate tax bases. School administrators are directly concerned with financing program improvements from the property tax. For these and other reasons, school administrators have a legitimate concern with the general efficiency and equity of property tax administration, and specifically with assessment procedures and practices.

Information Requirements and Data Sources. *The revenue projection methodology presented here relates more to projections to be made in future years than in the development of the Base Case*. With more time to accumulate a revenue data file, projections made as part of the base case can be critically evaluated and reviewed. Availability of data on both the base and rate of the property tax is critical to the development of more refined projections. In addition to material presented here school superintendents in both Bucks County and Area 9 should be aware of two publications of the Government Studies Center of the Fels Institute which provide extremely useful information:

-*Survey of Community Characteristics and Prospects*, prepared by Arnold R. Post for the Intermediate Unit Planning Study - includes area and county economic trends, and prospects in both Area 9 and Area 22 for school enrollments, housing growth, population, and values of taxable real estate. Since preparation in November, 1967, school enrollment projections for many school districts have been updated.

-Memorandum to Long Range Development Planners, Bucks County School District concerning "Estimates of revenues from local sources." Because of its location in the Philadelphia metropolitan area, Bucks County has a broader range of economic data developed as a part of regional planning efforts.

Alternative Methods for Projecting the Real Property Tax. Table I summarizes various methods and information requirements for estimating prospective revenues from taxes on real estate. Generally revenues are a function of assessed values and collection procedures; assessed values are a function of market value and assessment procedures. Two principal methods of projection are thus available for real property tax projections: *Method I - Projections based on past revenue trends* and *Method II - Projections based on market value expectations*. As stated above, projection of market value expectations (Method II) are vital to a school district in that this value is critical for estimates of both the real estate tax and the state instructional subsidy. These two revenue sources accounted for between 65 percent and 90 percent of total revenues for Area 9 and Area 22 school districts in 1966-67. Yet these market value projections are extremely difficult to develop, and some school districts may wish to use Method II only when unprecedented economic changes of regional importance are anticipated - major highway, housing projects, or industrial development. But the logic of Table I is that the real estate projection becomes more refined as additional information beyond that necessary for Method I is developed, permitting more accurate identification of market value expectations. Table I and Note 4 "General Plan of Calculations - Base Case, Simplest Procedure - Method I" explains the information requirements and assumptions of Method I. Table

I also suggests those economic factors on which information must be obtained if the school superintendent desires to utilize Method II either now or at some time in the future.

Explanatory Notes for Table I. Table I - Projecting Revenue Yield from Real Estate/Property Tax has the following key characteristics:

1. Assumes that for any projection method, there are (a) data and information requirements, (b) sources of such data and information, and (c) assumptions and data manipulations that can be made from such information.

2. Economic factors, community development, and assessment practices and procedures are the primary variables on which information must be obtained. Economic factors and community development include all elements necessary to project the future market value of real estate, while assessment practices include all elements necessary to project assessed value and the millage rate.

3. These economic variables should be considered in developing a projection method, whether past revenue trends or market value expectations are relied upon.

4. General Plan of Calculations (Base Case, Simplest Procedure) - Method I.

    a. Estimate future gross revenues from property tax by extension of trend from past values, corrected for changes in millage and reassessments. (Table I, line 1.)

    b. Extend the trend of assessment ratios (assessed value as a percentage of market value) since the time the last reassessment. (Table I, line 8.)

    c. Divide the gross revenue estimate by the product of assessment ratio times millage rate to yield estimates of future market value of taxable real estate.

Method I assumes that (1) whatever has happened in the recent past is representative of what can be expected in the near future, (2) that the procedures in the County assessor's office will not include a general alteration or change in their net impact on discounting market values, and (3) that the current tax rate and past patterns in efficiency of collection will persist. The uncertainty factor in the estimates of future gross revenue from this source can also be interpreted to indicate uncertainty in the market value estimate and in revenue from the state subsidy. Given efficient collection procedures and sensitive assessment procedures, trends in past revenues corrected for changes in millage rates will reflect the trend in market value gains.

5. General Plan for Calculations (Base Case, Analytical Procedure) Method II.

   a. Estimate changes in total market value, or in market value for each class of property within the school district. Sub-components of a single class of property - such as apartment and single family units within the residential class may also be estimated when property developments suggest a particularly significant impact on future revenue yield. (Table I, lines 2-7.)

   b. Develop a total market value estimate for one five years beyond the current fiscal year. (Summation of estimates in lines 2-7.)

   c. Develop projections of the assessment ratio for each of these years, and apply this ratio to the computed total market value to obtain the total assessed valuation for one and five years hence. (Table I, lines 8-11.)

   d. Make assumptions concerning the millage rate for those years and compute the revenue yield for those years. (Table I, line 12.)

   e. Determine the net dollar gain in values for the five year period and divide by five to estimate annual net gain for intervening years.

Method II presents a comprehensive listing of community development factors and assessment practices which the superintendent may wish to consider in the future, without implying any requirement that all these factors must be considered in developing the Base Case.

TABLE I

Projecting Revenue Yield from REAL ESTATE PROPERTY TAXES

Elements in Projection Projection Methods	A. Community Development And Assessment Practice Information Requirements	B. Sources Of Data And Information	C. Assumptions or Data Manipulation
1. METHOD I - Projections based on past revenue trends.	1. Past five years of revenue yield data, including millage changes	1. County and school district records, particularly PISA 16 and 25.	1a. Previous five years are representative of tax base movement in future years. b. An adjustment is made for (1) any general reassessment or major change in assessment procedures; (2) any change in tax rate; and (3) any change in the efficiency of collection procedures.
2. METHOD II - Projections based on total market value expectations, i.e. development of simple growth trends.	2a. Market value of taxable real estate, by school district. b. Household gains within the school district.	2a. Pennsylvania State Tax Equalization Board (PSTEB), published reports. b. County or school district triennial census, whether conducted by U. S. Bureau of Census or done internally by the county or school district.	2. Continuation of past trends in terms of either a constant % rate or amount of increase; or can assume a given percentage increase over and above direct continuation of past trends.
3. METHOD II - Projections based on market value expectations for classes of property, i.e. development of specific growth trends.	3. Market value of taxable real estate, by school district, for each class of property.	3a. PSTEB, unpublished reports available on request. b. Chamber of Commerce, real estate organizations and dealers.	3. Same assumptions as 2, broken down to classes of property.

Elements Methods	A. Community Development And Assessment Practice Information Requirements	B. Sources Of Data And Information	C. Assumptions or Data Manipulation
4. METHOD II - Adjustments to the simple and specific growth trends computed above are made for changes in general economic trends.	4. General information on the pattern of future economic development within the community, related to the property tax base.	4a. County regional and other planning agencies; b. local banking and other financial institutions.	4. Permits educated local assumptions on increases in revenue yield for all classes of property.
5. METHOD II - Adjustments to the simple and specific growth trends computed above are made for existing and projected construction for all classes of property.	5a. Value of construction taking place in the current year; b. construction and building trends and projections, by class of property; c. absolute dollar value of commercial, residential, and industrial construction for the past three-five years.	5. Market sales studies are a guide to changes in existing properties over the short term also local builders, contractors, and financial institutions.	5. Estimated market value gains for each class of property for which data is available, sum your estimates for each class of property, use an acceptable ratio of assessed to market value (See below for alternative ratios), calculate projected taxable assessed value.
6. METHOD II - Adjustment to above estimates based on more refined calculation of future market value of commercial-industrial property.	6. Existing land use allocations, planned for potential changes in acreage and employment by type of land.	6. Local planning and zoning agencies, boards of zoning appeals or such regional agencies as the Delaware Valley Regional Planning Commission.	6. Will create change in market value of commercial-industrial property.
7. METHOD II - Adjustment to above estimates, based on more refined calculation of future market value of residential property.	7. Change in the number of households, derived from enrollment projections.	7. Enrollment projections generated by the PPBS system.	7. Public school enrollment is expanded to an estimate of total enrollment, from which an estimate of housing supply can be derived, and distributed by apartment or single family unit housing type, and by time period. (See Appendix E).

Elements	A. Community Development And Assessment Practice Information Requirements	B. Sources of Data and Information	C. Assumptions or Data Manipulation
Methods			
8. METHOD I - Extend the time trend of assessment ratios since the last reassessment.	8. Assessed value as a percent of market value, (with the percent being the assessment ratio), for all classes of property combined.	8. Pennsylvania State Tax Equalization Board (PSTEB), published reports.	8a. Continuation of past trends in the assessment ratio, either at a constant percent rate such as 5-6%, or a constant amount of increase or decrease. b. Ratio of assessed to market value unchanged. c. One percent increase for each one percent increase in personal income, or an assumed lag of 25 percent increase in assessed valuation for each 40 percent increase in personal income.
9. METHOD II - If separate market value projections are generated for specific classes of property, then assessment ratios should be projected for each class of property separately.	9. Assessed value as a percent of market value, for each class of property.	9a. PSTEB, unpublished reports available on request. b. County or other agency responsible for school district assessment.	9. Same assumptions as 8 broken down by class of property.
10. METHOD II - Adjustment for any of these factors should be reflected in the projection.	10a. Rate of removal of property from tax rolls, b. rate of reassessment of existing properties, and c. distribution of reassessments among property classes.	10. County or other agency responsible for school district assessment.	10a. Assessment lag during a previous period due to administrative practices and procedures b. Assessment of only new properties, with no reassessment of older properties c. Assessment of new properties by fixed schedules, older properties assessed in terms of sale prices, shifting the tax burden to older properties.

REAL ESTATE TRANSFER TAX	A. Data and Information Requirements	B. Sources of Data and Information	C. Assumptions or Data Manipulation
1. a. Projection of revenue trend yields	1. a. Previous five years of data on revenue yield at then existing rates.	1. a. County and school district records.	1. a. No substantial increase in housing supply or new developments.
b. Projections based or anticipated property sales.	b. Sales of new properties in terms of average price and # of new dwellings; sales of existing properties which are anticipated.	b. Developers, local realtors and financial institutions, building inspectors.	b. For new properties, the average price x # of new dwellings x the rate of the tax.
OCCUPATION TAXES			
1. a. Projection of revenue trend yields.	1. a. Previous five years of revenue yield data at then existing rates.	1. a. County and school district records.	1. a. No major shifts in occupational pattern within the district.
b. Projection of growth in employable population.	b. Classes of occupations taxed, growth in these classes, known or assumed rate of tax.	b. Regional economic studies, and Pennsylvania State Employment Service for the county or district.	b. Increase the anticipated revenue yield at the same rate as growth in employable population as a whole, or for particular classes of occupation.

Per Capita Taxes

Projection of per capita revenues requires estimation of the assessable population, that is, the portion of the population over 21. Elements involved in projecting the per capita tax are presented in Table II. The U. S. Bureau of the Census reports on population characteristics are the primary source of age specific data, broken down into five and ten year age groups. Such age specific population data are available in the 1960 Census only for municipalities larger than 1000. The 1970 Census may be able to provide such data and a considerably expanded range of information for school districts, on request.

Wage and Income Taxes

Wage and income tax yields are linked to the working age population within a district, and the growth of the local economy. As with the real estate and per capita taxes, projections can be based on trends in revenue receipts adjusted on the basis of judgment for any major economic shifts. If more refined projections are desired then the economic components of the tax need to be examined. In those districts where a wage or earned income tax is now levied, collections can be projected in proportion to the district's expected gains in households and expanded by a price level index. In districts where this tax may be considered as an additional revenue source, the potential yield will be affected by the median household income and the number of households. Commuting patterns of persons residing within the district, and the taxing policies of surrounding jurisdictions in which residents may be employed are also pertinent.

Real Estate Transfer Tax

Revenue yield has two main components - sales of new properties and sales of used or existing properties. Return from sales of existing properties must be based on trends in revenue yields. Estimates of sales of new properties could be developed with information on the average price of new single family dwellings, the number of such dwellings anticipated during a given time period, and the real estate transfer tax rate.

Occupation Tax

Trends in revenue receipts should be an adequate means of projection. If the tax provides a significant revenue yield for a school district, projections should be based on the anticipated growth of the employable population. If the tax varies with classes of occupations, projections can be made based on anticipated growth of these occupation classes and the known or assumed tax rates applied to these individual classes.

T A B L E II

Projecting Revenue Yields from PER CAPITA Taxes, WAGE AND INCOME taxes, REAL ESTATE TRANSFER, and OCCUPATION Taxes

	Elements in Projection		
Projection Methods	A. Data and Information Requirements	B. Sources of Data and Information	C. Assumptions or Data Manipulation
PER CAPITA TAXES			
1. a.b. Projection based on past trends of either persons assessed or revenue yield, adjusted for rate changes.	1. a. Previous five years of data on the number of persons assessed and the revenue yield at the existing rates.	1. a. State, county, and school district records.	1. a. Population changes in the future will reflect the changes during the past five years.
	b. Collection factor.	b. Experience with the tax.	b. Either there is little or no effect on the revenue yield or there is the necessity of considering a collection factor.
c.d. Projection based on some estimate of population over 21 for future years.	c. Age Specific Population (# of persons in five and ten year age brackets). d. Enrollment forecast for the school district (# of persons age 0-19).	c. U. S. Bureau of the Census, Population Characteristics, Penna. PC (1)-40B, PC (1) 40C; County or school district triennial census. d. Provided by the PPBS system and enrollment estimating procedures. (See Appendix E)	c & d. Proportion of population over 21 as of 1960 must be adjusted for enrollment projections.
WAGE AND INCOME TAX			
1. a. Projection of revenue trend yields.	1. a. Previous five years of data on revenue yield at existing rates.	1. a. County and school district records.	1. a. No substantial shifts in # of households or employment within the school district.
b. Projection of working population within the district.	b. Median household income, # of households, commuting patterns, present rate, price level index for inflationary factor, tax policies of neighboring districts.	b. Bureau of Census figures on median household income: # of households can be derived from PPBS study or may be available from local assessor. Pennsylvania State Employment Service has information on average rates of pay.	b. For projecting an existing tax, use anticipated gain in households inflated by price index; for anticipating yield from a new tax, use median household income within the district times the # of households.

Elements Methods	A. Community Development And Assessment Practice Information Requirements	B. Sources Of Data And Information	C. Assumptions or Data Manipulation
11. METHOD II - Adjustment in market value expectations based on these factors.	11. Changes in property tax administration, alternative assessment practices and procedures.	11. County or other assessing agency.	11. Develop assumptions appropriate to the planned change in assessment practices.
12. METHOD I or II - Adjustment of millage rate to reflect a balance of revenue and expenditures or use of budget surplus or deficit.	12. Present millage rate and effective millage rate for the previous five years.	12. County or school district records.	12a. Constant, no change. b. Various changes in millage rate, recognizing changes in revenue per mill.

GLOSSARY

Program Manager - The individual charged with the direct supervision of a program, subprogram, subprogram element, or activity.

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